

YOUR **ULTIMATE GUIDE** TO EVERYTHING CAMERA AND KIT RELATED

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GEM CLASSIC
CAMERA BAGS

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WHAT DIGITAL Camera

THE MAGAZINE YOU NEED TO FIND YOUR NEXT CAMERA

APRIL
2015

WORLD'S FIRST 50MP DSLR

FULL FRAME

Canon strikes gold with the EOS 5DS and ups the ante in the resolution stakes



Editing skills

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PULLOUT

- Raw processing tips & tricks
- Fast Photoshop shortcuts
- Mobile editing app round-up
- Best graphics tablets
- Workflow speed solutions
- Film simulation packages

OLYMPUS OM-D E-M5 MK II

The successor to the OM-D E-M5 is a retro beauty. We reveal all



ESSENTIAL GUIDE TO CAMERA BAGS

Want to protect your kit? We round up all the best bags on the market



NIKON D5500

It's lighter, smaller and better than before, but is Nikon's first foray into touchscreen technology a success?

TOP 24 INTERCHANGEABLE LENS CAMERAS REVIEWED AND RATED

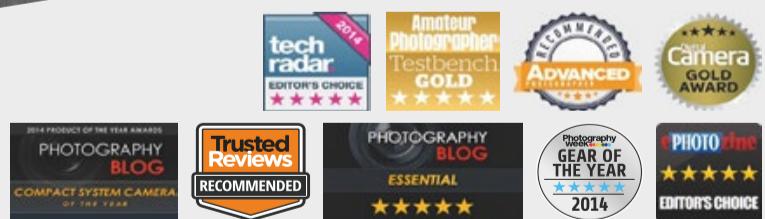
Our listings rate and compare the specs of all the finest DSLRs, CSCs & compacts

SAMSUNG



The award winning
Samsung NX1
with UHD 4K video.

- Redefine image quality with the 28MP BSI APS-C CMOS sensor
- Hybrid AF with 205 phase detection, 209 contrast detection and 153 cross-type sensor points
- Fast and precise continuous shooting up to 15fps at full resolution
- Capture fast-moving action with exquisite clarity at 1/8000 sec. shutter speed
- Breathtaking 4K UHD video recording in HEVC (H.265) format
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- Highly durable dust and splash resistant magnesium alloy body



Available at **John Lewis**

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Samsung SMART CAMERA **NX1**



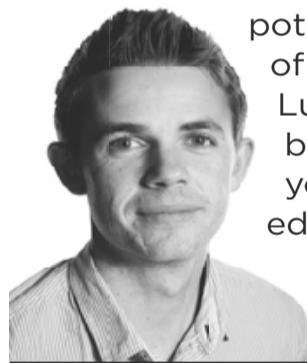
APRIL 2015

After a fairly quiet start to the year for new camera launches, this month we've seen an influx of some really exciting models. Refreshing the extremely popular OM-D series, Olympus has set out to build upon the success of the retro-inspired OM-D E-M5 by unveiling their Mark II version; meanwhile Canon has dropped a bombshell by taking wraps off two DSLRs boasting the world's first 50MP sensor. We attended the launches of both to find out more and in our First Look section we reveal our first impressions.

A product on many first-time DSLR buyers' radars at the moment is Nikon's new D5500 – a camera we've been out testing to find out how well it performs and if Nikon's first foray into touchscreen technology has been a success. You can read our review on page 14.

Also in this issue, we test what has the potential to be the travel-zoom camera of the year in form of the Panasonic Lumix TZ70, we round up the very best camera bags out there and bring you our best tips when it comes to editing in front of your computer and speeding up your workflow. Enjoy!

MANAGING EDITOR MICHAEL TOPHAM



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20 lucky readers will each bag a Gem Classic case!

TESTS YOU CAN TRUST

To ensure the camera you buy doesn't disappoint when you get it home, every camera that passes through the hands of *What Digital Camera*'s highly experienced technical team is put through a series of tests to analyse how it performs.

Every model, from high-spec

DSLRs through to entry-level compacts, is subjected to a series of rigorous tests in our lab, with results analysed by the very best industry software. This makes our reviews the most authoritative in the UK.

We test for colour – different sensors and camera image

processors can interpret colour differently, while this can also shift at different ISO sensitivities. We then get down to the nitty-gritty of resolution, with our lab tests showing us exactly how much detail each camera can resolve – even though cameras can share identical pixel counts,

some perform better than others. Then we look at Image Noise, since different cameras can produce cleaner images at higher ISOs than others.

Finally, we get out and shoot with every camera and lens in real-world conditions just as you will, to find out how they perform.

COLOUR

Subjecting each camera to our colour chart test reveals any variation and differences in colour between Raw and JPEG file formats.

RESOLUTION

Our resolution chart reveals exactly how much detail a sensor can resolve and it's measured in lines per picture height, abbreviated to l/ph.

NOISE

The diorama is used to ascertain how image noise is handled through an ISO range. Some cameras produce cleaner results than others.

FIRST LOOK

The 5DS and 5DS R both feature 1.3x and 1.6x crop modes for greater reach from Canon EF lenses



CANON'S 50MP DSLRS

MICHAEL TOPHAM • MANAGING EDITOR

After weeks of rumours as to what might be coming from Canon in 2015, the manufacturer has taken wraps off two new full-frame DSLRs – the EOS 5DS and EOS 5DS R. Building on the success of the EOS 5D Mark III, the EOS 5DS and EOS 5DS R are set to target photographers looking to record unparalleled levels of detail thanks to the inclusion of a 50.6MP full frame sensor that has never been seen before.

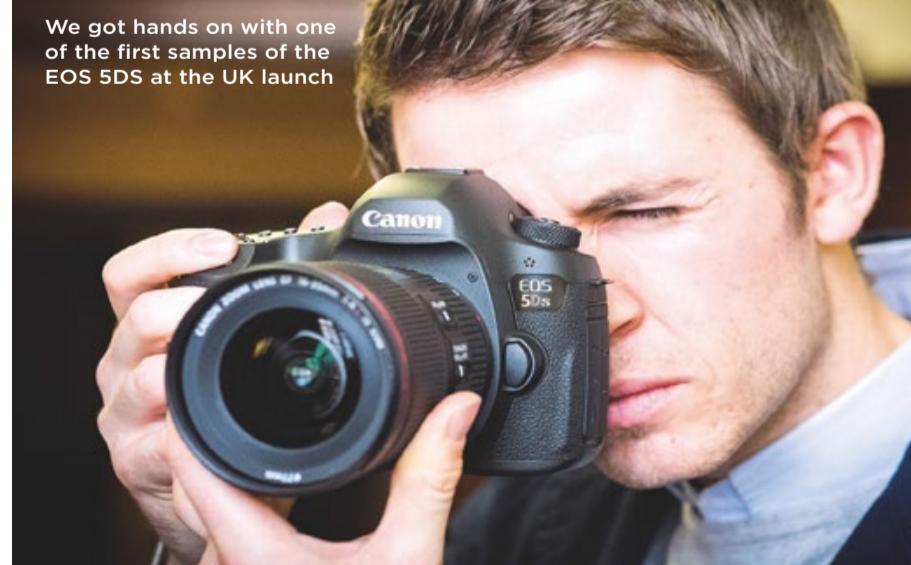
Designed exclusively by Canon, it is the highest resolution full frame sensor to date.

While the two models are identical in nearly every way, the key difference is centred on the optical low-pass filter (OLPF). Whereas the EOS 5DS incorporates a low-pass filter in front of the imaging sensor to reduce the effects of false colours and moiré patterning, on the EOS 5DS R this effect is essentially ‘cancelled’ to maximise the resolution and resolving power of the sensor – a

very similar approach that we've seen Nikon apply before on the D800E. Another feature we've previously associated with Nikon DSLRs, which Canon now seems to be addressing, are in-camera crop modes. As well as being able to record images at the maximum 50.6MP resolution, there are now 1.3x and 1.6x crop modes available to get a bit more reach from EF lenses. It should be noted however that these

HIGHLIGHTS

SENSOR 50.6MP CMOS
PROCESSOR Dual DIGIC 6 image processors
ISO 100-6400 (expandable to ISO 50-12,800)
BURST 5fps continuous shooting
AUTOFOCUS 61-point AF system with 41 cross types
METERING 150k pixel RGB+IR metering sensor
CROP MODES 1.3x (30MP) and 1.6x (19MP) crop modes available
VIDEO Full HD (1920 x 1080) @ 30, 25, 24fps
PRICE EOS 5DS (body only) £2,999, EOS 5DS R (body only) £3,199. Both available from June



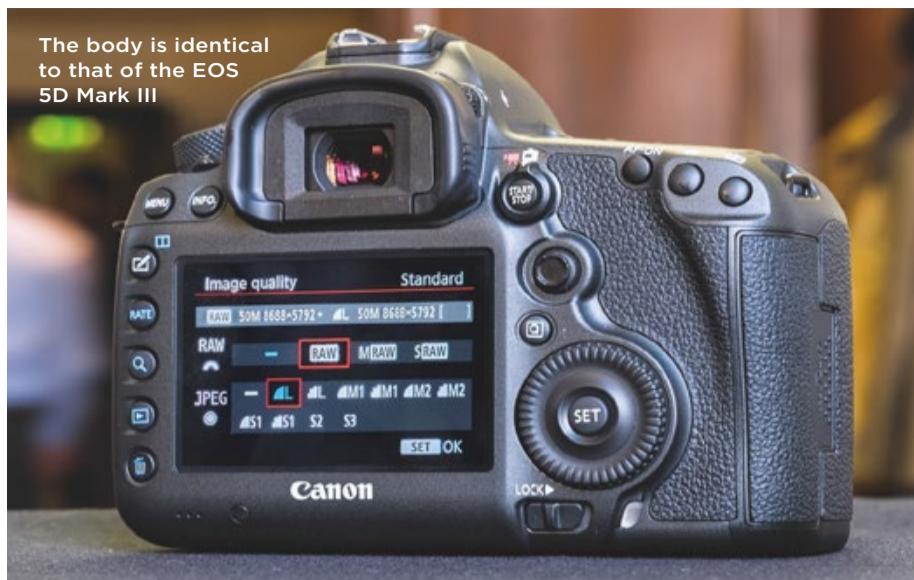
crop modes do have an impact on the output resolution, producing a 30MP image and a 19MP image respectively.

Added to all this, the bods at Canon have taken time to re-engineer the mirror box to ensure the 5DS and 5DS R operate as smoothly as possible to reduce any risk of blur caused by the mirror's movement. Canon's all-new mirror vibration control system uses cams to operate the mirror in a smoother fashion, resulting in a shutter-release sound that we found to be quieter than the EOS 5D Mark III from our hands-on experience with the EOS 5DS.

Getting back to the sensor's capabilities, it offers a native ISO range of 100-6400 that's expandable to as low as ISO 50 or as high as ISO 12,800. While this might not be as wide-ranging as the EOS 5D Mark III, which shoots between ISO 100 and 12,800 (with the option of expanding to ISO 50 and as high as ISO 102,400), the EOS 5DS and 5DS R's sensitivity ceiling should be sufficient for the landscape, fashion and architectural photographers who both models are out to target.

Imaging sensor aside, the 5DS and 5DS R feature the same arrangement of dual DIGIC 6 processors as used on the manufacturer's flagship model – the EOS 1D X. Both processors are designed to handle the huge volumes of data created by the 50.6MP sensor, while offering a maximum continuous shooting speed of up to 5fps – one frame per second slower than the EOS 5D Mark III. Not to be let down by its autofocus system, both of the new models adopt the superb 61-point AF system from the 5D Mark III, which comes with 41 of the sensitive cross-type points, including five dual cross-type points at f/2.8.

Yet to touch on the subject of exposure, this is left in the capable hands of Canon's 150k pixel RGB+IR metering sensor, which first made its appearance in the Canon EOS 7D Mark II. Also carried to the 5DS and 5DS R is the same flicker detection technology that ensures images are only shot at their brightest level – intelligently analysing the



light source and detecting flickering light the eye can't see.

Although the innards of the 5DS and 5DS R are different from the 5D Mark III, they're housed within the same magnesium alloy body and feature the same level of weather sealing.

Canon users looking at these latest additions will appreciate that both are powered by the same rechargeable LP-E6N Li-ion battery that has enough stamina to shoot approximately 700 shots from a single charge. The bodies of both models are compatible with Canon's BG-E11 battery grip (£249).

Clearly designed to capture the highest quality still images, the 5DS and 5DS R are also capable of recording video footage at Full HD (1920 x 1080) resolution, with a variety of frame rates to choose from including 30, 25 and 24fps. What's also interesting is Canon's decision to do away with the headphone port at the side, replacing it with a USB 3.0 terminal that the manufacturer appreciates is more important for users of these cameras. The 3.5mm mic port for attaching an external microphone remains positioned above the PC socket and remote release sockets at the side.

At the rear, the 5DS and 5DS R adopt the 3.2in, 1,040k-dot Clear View II LCD screen from the 5D Mark III. Where there has been a change however is to the Quick Control screen interface, which now allows for much better customisation of the type, size and position of icons. Whereas the Quick Control screen couldn't be customised before, users can now rearrange the layout to their liking – not only helping to speed up the time it takes to make adjustments, but to also set up

the camera in a way that feels more intuitive to the user.

FIRST IMPRESSIONS

Both cameras are sure to whet the appetite of landscape, fashion, portrait and architectural photographers, but also those who regularly shoot stock photography for image libraries where there's not only a continuing demand for the highest resolution possible but also in many cases the opportunity to earn more.

Canon looks to have overcome the huge demands of the 50MP sensor very well by implementing a pair of powerful DIGIC 6 image processors to run the camera at an impressive speed, and during our brief hands-on with a pre-production 5DS sample (5DS R samples weren't present at the UK launch) we experienced no issues with regard to the performance of shooting such large files, even when set to continuous. The addition of the 1.3x and 1.6x crop modes are also well received and with the 1.6x crop mode deployed, I found it impressive how the AF coverage stretches right into the far corners of the frame.

Being the only 50MP full frame DSLRs available at the time of writing, the 5DS and 5DS R currently sit in a field of their own and look set to challenge other DSLRs with high-resolution outputs extremely hard – the closest full frame rivals being the Nikon D810 and Sony A7R. Our underlying concern of how well the huge files will run on anything but the most expensive and fastest computers is something we're keen to find out as soon as our review sample arrives with us at the WDC office.

CANON EF 11-24MM F/4L USM

MICHAEL TOPHAM • MANAGING EDITOR

On the same day that Canon took wraps off the EOS 5DS and EOS 5DS R, the all-new EF 11-24mm f/4L USM has been unveiled – the world's widest-angle rectilinear zoom lens. This super-wide focal range lens is exciting news for Canon full-frame users, especially those who regularly shoot landscape or architectural subjects, who have been calling out for a lens of this type for years and one that's on par, if not better than, the highly respected Nikon AF-S NIKKOR 14-24mm f/2.8G ED. With an arrangement of 16 elements in 11 groups, the construction of the lens features no fewer than four aspherical lenses, one of which being the ground aspherical type to maximise image quality and ensure it delivers minimal levels of distortion.

The renowned red ring around the fixed petal hood is the giveaway that it falls into Canon's camp of L-series lenses and as such features the manufacturer's Ultrasonic Motor (USM) technology to keep focusing precise, virtually noiseless and incredibly quick. The EF 11-24mm f/4L USM is also the first lens in Canon's EF line-up to feature two sub wavelength coatings (SWC). Set to its widest focal length, the lens has a minimum focusing distance of 32cm at 11mm, which shortens to 28cm when it's set to 24mm.

With such a large and bulbous front element, the EF 11-24mm f/4L USM relies on its fixed petal-shaped hood and push fit lens cover to protect it

when not in use. Screw-in filters are not compatible with the lens however and there's no suitable filter holder available at present. That said, Canon has disclosed that they're currently in talks with Lee Filters to produce a similar filter holder kit to that produced for Nikon's AF-S NIKKOR 14-24mm f/2.8G ED – a lens which is similar in the way that it features a bulbous front element.

Other interesting points to note are its weight, which at 1,180g makes it a heavy lens to handle. The zoom ring has been designed to operate across its range in just under a quarter of a turn, while the body is extremely rugged and features dust and water resistance to make sure it's suitable for use in the most demanding environments and situations.

FIRST IMPRESSIONS

What strikes you first about the lens is just how immense it is and how much glass is used in its construction. It feels every bit as heavy as you'd expect and rather front heavy too – the use of a battery grip with the EOS 5DS to which it was mounted would have certainly improved the handling of this combination. The zoom ring and manual focus ring are of similar size and operate with a pleasingly fluid motion, with neither being stiffer than the other. The AF/MF switch proved easy enough to find from behind the camera and as to be expected from a lens with such an extortionate price tag (£2,799), the build quality is sublime. While the price is likely to put it out of reach for many enthusiast and semi-pro photographers, it's likely to be a lens that's very much in demand from Canon professionals and those who'd prefer to pay a fraction of the price to hire it on a one-off basis. As this issue went to press our review sample arrived in the office, so you can expect a full review very soon.



FIRST LOOK

The five-axis in-body IS system offers five stops stabilisation and works with all lenses

The vari-angle LCD both swivels and tilts for a wide range of viewing angles



OLYMPUS OM-D E-M5 MARK II

ANDY WESTLAKE • TECHNICAL EDITOR

The OM-D E-M5 Mark II is Olympus's update to its highly regarded two-year old compact system camera. Like its predecessor, it's a premium model with a design that harks back to classic film SLRs. With a Micro Four Thirds lens mount, it's compatible with a comprehensive range of lenses from Olympus, Panasonic and third-party makers.

A 16MP Four Thirds sensor gives a standard sensitivity range of ISO

200–25,600, with an extended ISO 100 setting also being available. Continuous shooting is available at 10fps with fixed focus, or 5fps with autofocus. The maximum shutter speed has been increased to 1/8000sec, and for the first time for Olympus, a fully electronic silent shutter offers speeds from 1/16000sec to 60sec. The 81-point contrast detection autofocus system covers almost the entire frame.

The headline-grabbing feature is a new 40MP composite stills mode. This takes eight images, using the camera's in-body image stabilisation system to move the sensor by 0.5 pixels between each shot. They're then combined into a single high-resolution image.

This system has limitations: the camera has to be used on a tripod, moving subjects could blur between frames, and raw shooters will end up with vast files which may only ever be recognised by Olympus's own software. But it's an exciting innovation nonetheless.



HIGHLIGHTS

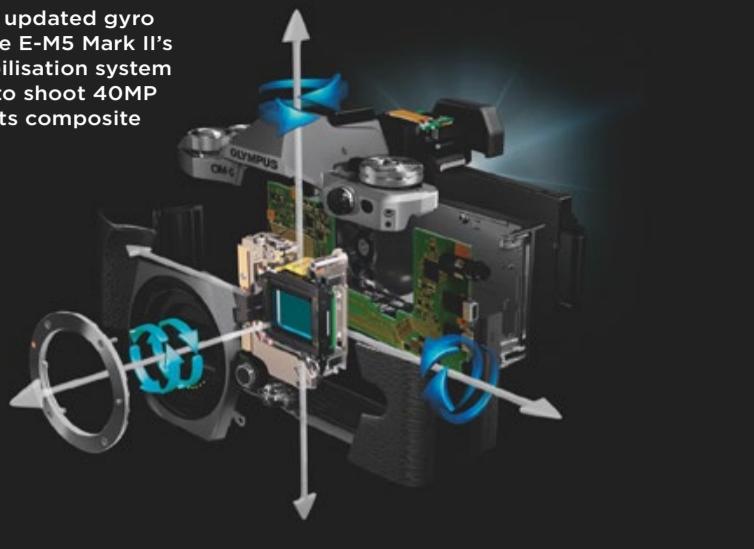
SENSOR 16MP Four Thirds
LENS MOUNT Micro Four Thirds
LCD 3in fully articulated touchscreen
STABILISATION Built-in five-axis sensor-shift
BURST 10fps (with fixed focus)
VIEWFINDER 2.36m-dot electronic
VIDEO Full HD movie recording at up to 60fps
PRICE £899.99 body only, £1,099.99 with 12–50mm f/3.5–6.3 lens, or £1,249.99 with 14–150mm f/4–5.6 II lens

Both the viewfinder and screen gain useful updates compared to the previous model. For eye-level composition, a higher resolution 2.36-million-dot electronic viewfinder gives a view similar in size to a full-frame SLR. Meanwhile the 3in 1,037k-dot touchscreen is now fully articulated, rather than tilting in only one direction.

There's no built-in flash, but a small external unit is included in the box. The weatherproof FL-LM3 has a guide number of 9.1m (ISO 100), a tilt-and-swivel bounce head, and can be used as a controller for wireless flash.

The Mark II's body is about the same size as the original E-M5's,

Employing updated gyro sensors, the E-M5 Mark II's image stabilisation system enables it to shoot 40MP images in its composite stills mode



but the control layout now closely resembles that of the E-M1. The twin control dials are much deeper, with the rear one falling directly under your thumb. The various buttons have been enlarged and repositioned, and the mode dial has acquired a toggling lock button.

Video should be substantially improved too, with the option of All-I encoding at 77 Mbps for higher-quality footage. A microphone socket is built in, and the touchscreen can be used for changing settings silently. The camera can also output clean video to an external recorder over HDMI.

ACCESSORIES

The E-M5 Mark II gets a similar two-part accessory grip to the original E-M5, the Power Battery Holder HLD-8. The first section adds a larger handgrip and includes a headphone socket; the second adds a vertical grip and a duplicate set of controls. Alternatively, there's the all-metal ECG-2 handgrip, which as well as the larger grip, has integrated Arca Swiss compatible tripod

plates for both landscape and portrait format shooting.

As for lenses, the M.Zuiko Digital ED 14-150mm f/4.0-5.6 II is a weather-sealed version of Olympus's existing superzoom, and will be sold as a kit with the E-M5 Mark II. Other accessories include an underwater housing and a leather case that will hold the 12-40mm f/2.8 lens.

FIRST IMPRESSIONS

At first glance the Mark II may not seem much of an update on its predecessor, but delve a little deeper and Olympus has clearly been heeding user feedback, improving the camera in many ways. The new 40MP composite mode will probably attract the most attention, but as a current E-M5 owner, I find it's the least important. The fully articulated screen, improved control layout and silent electronic shutter are all more practical improvements for everyday shooting. Overall it seems a very well-considered update, and we're looking forward to getting hands on one for a full test.



Note the larger and more substantial dials on the top-plate and the new PC socket at the front

NIKON D810A BUILT FOR ASTROPHOTOGRAPHY

MICHAEL TOPHAM • MANAGING EDITOR



Among a flurry of new Coolpix models to arrive from Nikon (see pages 8 and 9), the manufacturer has announced its first ever FX-format DSLR for astrophotography. The release of the D810A is a modification of the popular D810 model and comes with a host of specialised functions to capture the finest images of the cosmos at a 36.3MP resolution. Much like Canon developed a variant of the EOS 60D in the form of the EOS 60a for deep sky photography back in 2012, Nikon's D810A features a redesigned infrared (IR) cut filter, making it four times more sensitive to reddish light from the H-alpha spectral line. The result: the redesigned IR cut filter allows the true colour of the nebulae that emits on the hydrogen-alpha wavelength to be captured without requiring any modifications to the camera - a must-have for those who'd like to capture the cosmos as accurately as possible.

Built on the full-frame characteristics of the Nikon D810, the D810A's standard ISO range runs between 200 and 12,800, with the option for it to be expanded to a setting equivalent to ISO 51,200. Furthermore, the D810A has been carefully designed to ensure it takes into consideration some of the challenges astrophotographers face when shooting the cosmos, starfields and star landscapes. Alongside Bulb

and Time settings, a new Long Exposure Manual mode has been introduced, allowing photographers to dial in exposures of up to 900 seconds. To minimise internal vibrations during exposure, photographers also have the option to activate the camera's electronic front-curtain shutter and reduce the risk of micro-blur in subtle details. With Live View activated, a virtual exposure preview for Bulb and Time settings is on hand to aid focus and framing, while as with the D810, the Live View image can be magnified up to 23x - ideal for making critical focus checks with precision before the shutter is fired. Added to these specialised functions is a new red-lit virtual horizon display that lets you confirm levelling when shooting through the viewfinder.

While the D810A is clearly a DSLR aimed at a very specific audience, Jeremy Gilbert, group marketing manager for Nikon UK, commented at the launch: 'It's a significant product for us and shows our support for niche photography markets.' He went on to add: 'We see the product being very successful for us.' Though there was no sample of the D810A to handle at the launch, we were told D810A users could expect an identical body and control layout to the D810. The D810A will be available to purchase from the end of May priced at £2,999 (body only).

INCOMING

THIS MONTH'S HOTTEST NEW GEAR



NIKON COOLPIX AW130

Designed to be taken anywhere, the AW130 is about as tough and rugged as it gets. Waterproof to a depth of 30m, cold resistant to -10°C and shockproof from 2m, it also comes Wi-fi and NFC equipped for instant wireless transfer. Key features include a 16MP sensor, 5x optical zoom (24-120mm) and 3in, 921k-dot screen. It'll be available in red, black, blue, camo and yellow.

£279 www.nikon.co.uk



OLYMPUS TG-860

The Tough TG-860 has the widest wideangle lens in its class (21-105mm). It's out to appeal to adventurous types who need a camera that'll survive the rough and tumble.

£269 www.olympus.co.uk



FUJIFILM X-MOUNT PANCAKE LENS

Say hello to the XM-FL X-mount pancake lens. It's equivalent to a 37mm f/8 lens in 35mm terms with a 1m minimum focusing distance.

£70 www.fujifilm.eu/uk



SAMSUNG NX500

The NX500 takes the core functionality from Samsung's NX1 and squeezes it inside a small, portable body. It adopts the manufacturer's highly impressive 28MP APS-C sensor.

£600 www.samsung.com/uk



ARCA SWISS Z2+

The Z2+ allows photographers to adjust both the horizontal and vertical axes with just one ball head. The load bearing is also improved.

£730 www.arca-shop.de/en



CANON EOS 760D

Launched alongside the new EOS 750D is the EOS 760D - a model that leans further towards the needs of aspiring enthusiasts, with its dual control wheels to take independent control of shutter speed and aperture. It shares many features with the EOS 750D, including an all-new 24MP sensor, native ISO range of 100-12,800, 19 cross-type AF point system and 3in vari-angle screen.

£649 www.canon.co.uk



PENTAX 150-450MM F/4.5-5.6ED DC AW

Mounted to a Pentax K-mount DSLR, this all-new zoom covers a focal range that's equivalent to 230-690mm. It's developed as an all-weather (AW) lens for maximum durability and reliability.

£TBC www.ricoh-imaging.co.uk



CANON EOS M3

This is Canon's new CSC that's been made to appeal to enthusiast photographers. Using the EF-M mount, it has a newly developed 24.2MP sensor and 49-point autofocus system.

£599 www.canon.co.uk



OLYMPUS 40-150MM

Olympus has launched the M.ZUIKO ED 14-150mm f/4-5.6 II, a second-generation lens that uses a new ZERO coating for enhanced optical quality. It's also now weatherproof.

£549 www.olympus.co.uk



PENTAX 70-200MM

The all-new Pentax 70-200mm f/2.8ED DC AW lens features a constant f/2.8 aperture throughout its focal range and is built around a dustproof and weather-resistant body.

£TBC www.ricoh-imaging.co.uk



NIKON P610

Nikon's Coolpix zoom line-up has been refreshed and sees the new P610 offer a 60x optical zoom, 921k-dot vari-angle screen and support for both Wi-fi and NFC connectivity.

£339 www.nikon.co.uk



CANON SX410 IS

Canon's latest SX410 IS employs a 20MP sensor alongside a DIGIC 4+ processor. Its 40x optical zoom sounds impressive, but it's only able to record movies at 720p.

£249 www.canon.co.uk



SIGMA 24MM F/1.4 DG HSM | A

Sigma has bolstered its range of Art prime lenses by unveiling the new 24mm f/1.4 DG HSM. This large aperture wideangle lens is claimed to have the highest optical performance in its class according to Sigma, and is said to enable a high rendering performance from the widest aperture. It'll be made in Sigma, Canon and Nikon mounts, but availability is still yet to be confirmed.

£TBC www.sigma-imaging-uk.com

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THE NEC, BIRMINGHAM

EPSON ULTRACHROME HD INK

*Compared against competitors' A3+ photo printers with a 6-colour or greater inkset available as of July 2014.



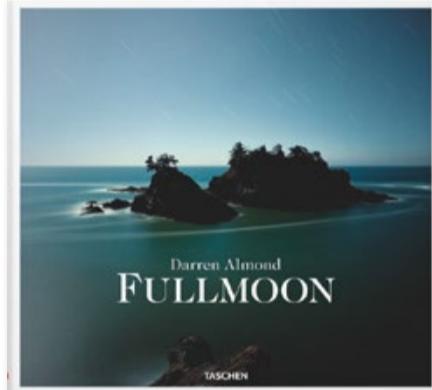
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BOOKS



FULLMOON

by Darren Almond
TASCHEN
£45



The landscape genre can be a difficult concept to explore. It isn't because of any lack of subjects or demands for technical proficiency; it's more that landscapes are such a popular genre where else is there to go? One answer lies in this achingly beautiful collection from conceptual artist Darren Almond, a practitioner whose work often explores the themes of memory, cultural history and time. In *Fullmoon*, Almond's conceptual edge navigates the terrain of the poetic. The execution is simple. Almond visits landscapes around

the globe and shoots them under moonlight, often leaving the shutter of his camera open for over a quarter of an hour. Such a long exposure means that each location – whether it be river, ocean, ice field or mountain – is bathed in the haunting glow of moonlight. The sublime is a concept that has much weight in the representation of landscapes and this is one of the few contemporary publications to represent that concept fully. As a result we have a book that can confidently be said to explore time, nature and beauty. **OA**

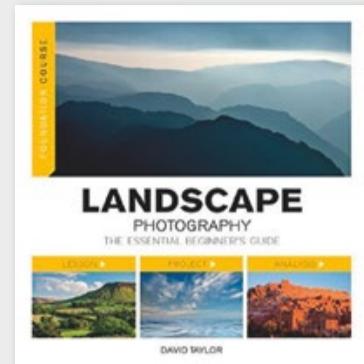
1985

by Bill Henson
STANLEY/BAKER £35

Australian contemporary art photographer Bill Henson is one of those photographers whose work can somehow get beneath your skin and lodge itself in the darkest



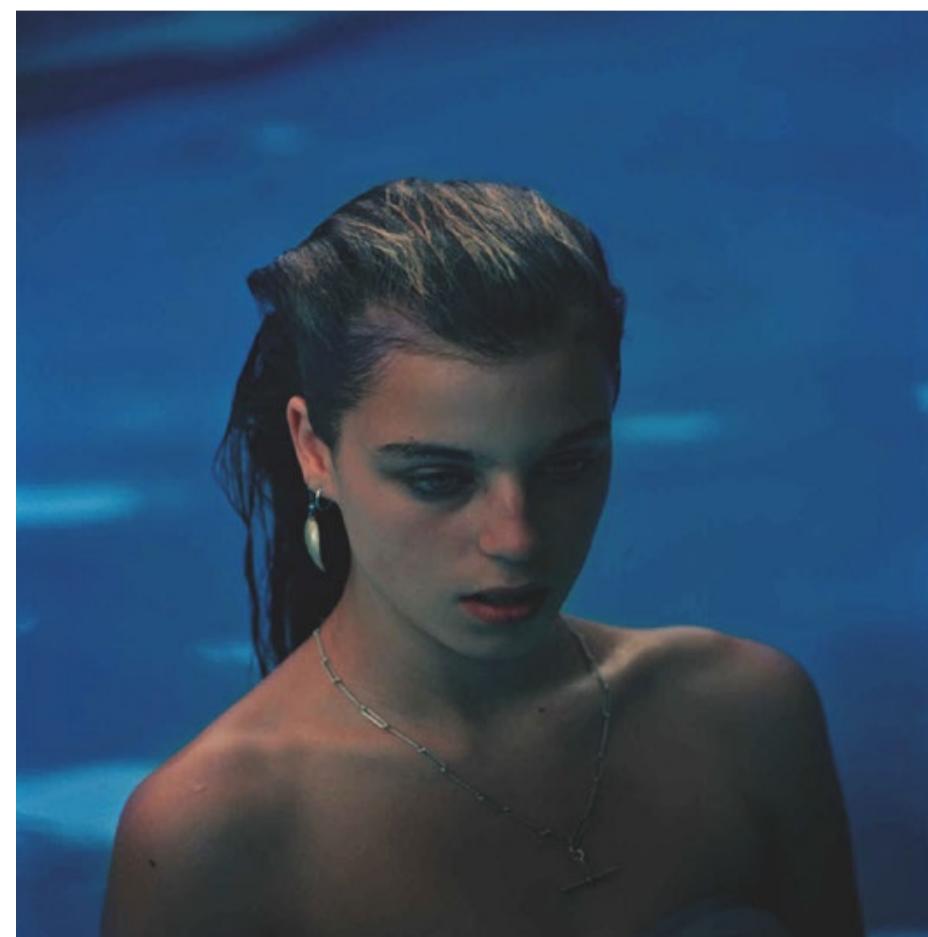
recesses of your subconscious. His images have much in common with Gregory Crewdson and Philip-Lorca di Corsia, in that the pose, lighting and action (if you can call it that) of the scenes seem to be fragments of a dream that have somehow escaped onto the page. *1985* consists of a series of images shot at dawn and dusk in the suburbs of Melbourne, Australia, and the deserts of Egypt. The images are, quite literally, the dream of suburbia. Seeing these images placed side-by-side with the deserts and pyramids of Egypt succeeds in rendering them even more meaningful and strange. What Henson attempts to show here is that the suburban landscape is essentially an interior world that we carry around with us throughout our lives. Home is a dream and weird infection that taints the rest of our days. **OA**



LANDSCAPE PHOTOGRAPHY:

The Essential Beginner's Guide,
by David Taylor
AMMONITE PRESS £17

We probably receive more books about landscape photography than we do on any other subject. There's a reason for that. Landscape photography is the genre that seems to unite a large portion of the photographic community. Every photographer has tried their hand at it but relatively few succeed at creating something truly unique. While this book makes no attempt to break new ground, it does do everything it can to ensure that you're equipped with the tools to go out there and create eye-catching and technically proficient landscape images that any photographer would be more than proud of. **OA**



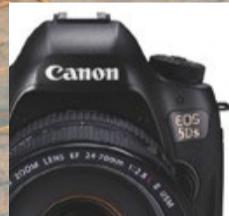
© BILL HENSON

OPENING SHOT

One of the first images taken with the all-new Canon EOS 5DS, revealing the resolving power of the impressive 50MP sensor

Professional landscape photographer and ambassador for Canon Europe, David Noton, recently got his hands on Canon's latest full-frame DSLR – the EOS 5DS – to find out how it performs.

To view more images taken on the new Canon EOS 5DS, visit: www.whatdigitalcamera.com/5DS

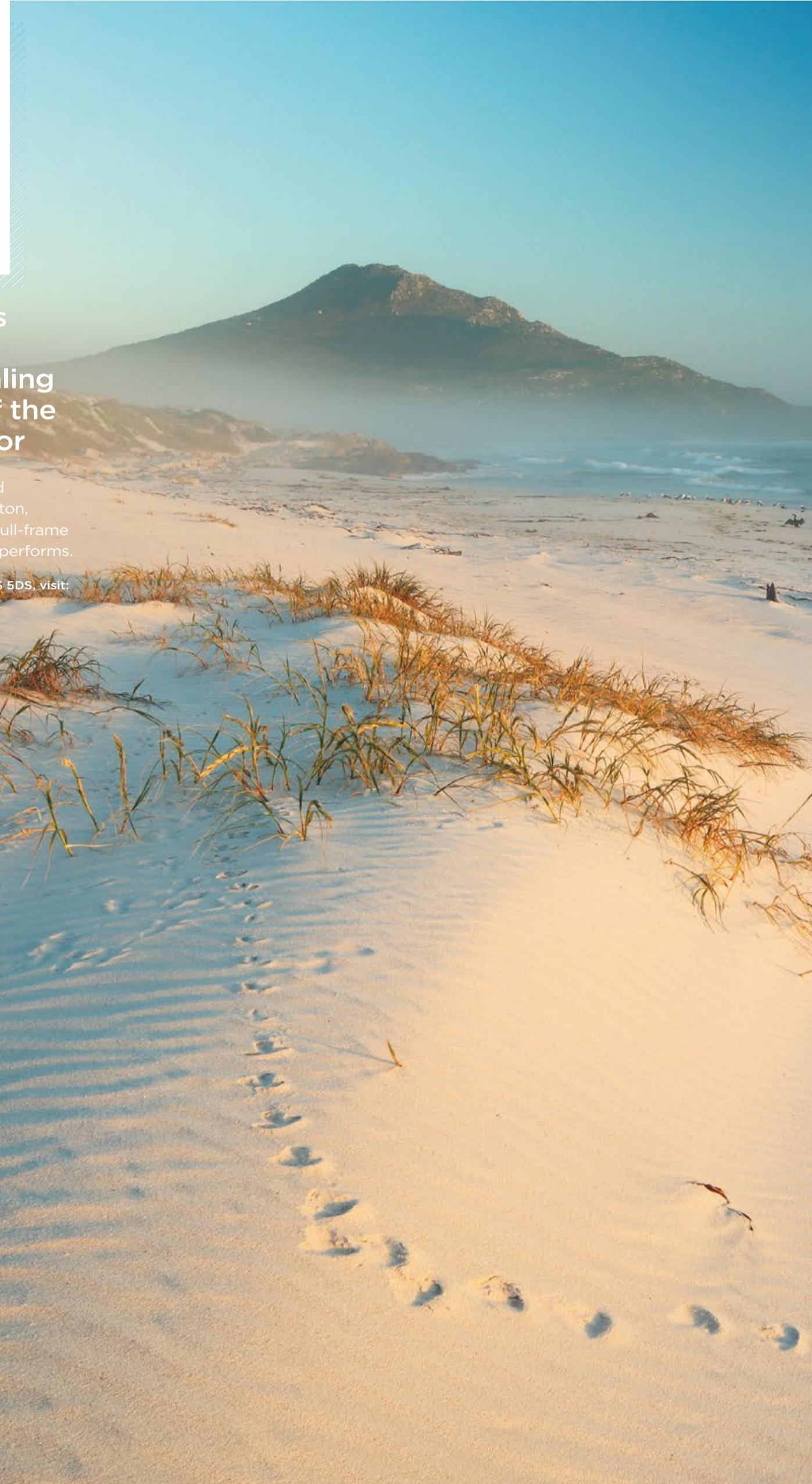


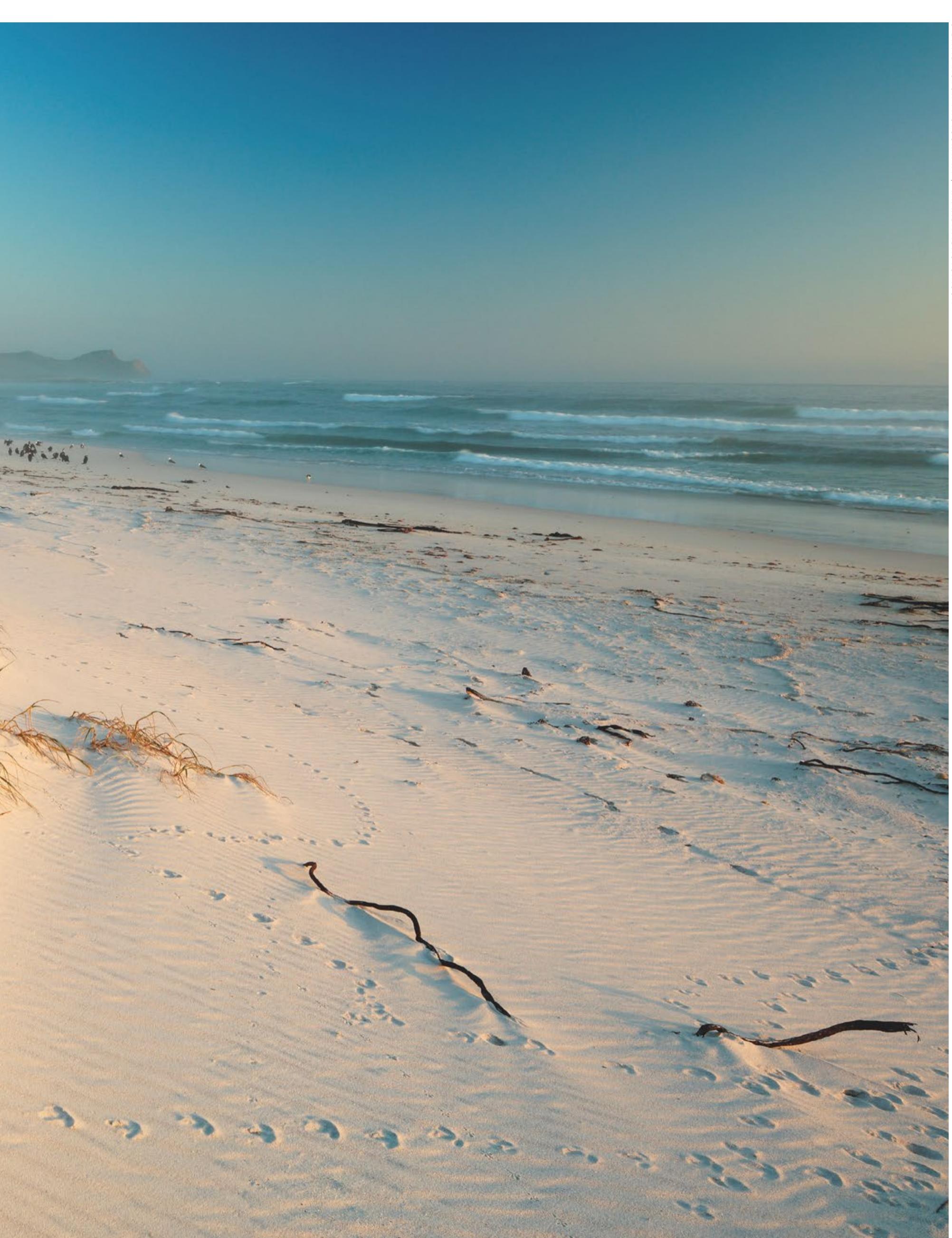
CANON EOS 5DS



PLATBOON BEACH, CAPE OF GOOD HOPE, SOUTH AFRICA
DAVID NOTON

David Noton is an award-winning landscape and travel photographer. His expertise in the field is second to none and his latest brief from Canon gave him the opportunity to put the all-new EOS 5DS through its paces. This shot demonstrates just how much detail can be resolved from a 50.6MP file. Canon EOS 5DS with TS-E 24mm f/3.5 L II, 1/5sec @ f/11, ISO 100





BIG TEST

NIKON D5500

The Nikon D5500 builds on the success of the D5300 with the addition of a new touchscreen and a tweaked design, but is this enough to justify its existence?

TESTED BY • CALLUM MCINERNEY-RILEY



DSLR

24MP
CMOS
SENSOR

3.2in
SCREEN

**100-
25,600**
ISO

£639
BODY ONLY

ESSENTIALS

Nikon's D5XXX series of DSLRs are an interesting proposition in the entry-level DSLR market. While most manufacturers announce their latest model as a replacement for the previous generation, or at least discontinue the last-but-one model, Nikon has decided to take a slightly different approach.

By way of offering entry-points at different price points, Nikon has continued to produce both the Nikon D5200 and D5300, and will presumably do so even after the launch of the new D5500. As a result of this, the improvements found with each new model can be incremental rather than revolutionary, giving those looking to take the step into DSLR photography a range of options. Nikon's new models so far this year have continued to impress, with the D5500 garnering particular acclaim. The D5500 continues to build on the series' feature-set, introducing new touchscreen LCD functionality and a redesigned body, but in what other areas does it substantially improve on the D5300?

FEATURES

As is ever the case with a new DSLR launch, it's always good to compare the camera to its predecessor; in this instance, therefore, it's good to check and see how the D5500 differs from the D5300.

One of the most welcome additions for the entry-level DSLR market will no doubt be the model's touchscreen functionality – a first in a Nikon DSLR and a feature we'll no doubt start to see drip feed into other new models higher up the range as and when they're released. While the specification remains the same – 3.2in in size, 1,037k-dot resolution and with vari-angle functionality – the unit's additional touchscreen functionality now offers access to all common shooting settings as well as image review and playback. For an entry-level market often familiar with touchscreen technology on their smartphone or tablet, this will no doubt prove extremely welcome.

The D5500's predecessor saw the introduction of both Wi-fi and GPS technology in the camera's body, rather than necessitating a separate terminal to be connected to the camera. Whilst the Wi-fi functionality remains, the D5500 dispenses with GPS geo-tagging capabilities. This will no doubt disappoint some, but thanks to a work-around using the

Wi-fi functionality, geo-tagging is still possible.

Outside of the major modification to the functionality of the LCD screen, and the dropping of the camera's native GPS functionality, the bulk of the model's specification remains the same as the D5300.

At its heart, the D5500 features the same 23.6 x 15.8 APS-C sized, DX-format sensor as found on the D5300 complete with a 24.2MP resolution. Once again the sensor lacks an optical low-pass filter and as a result should be capable of resolving a higher level of detail than rival cameras with the filter still in place. That said, there are certain disadvantages – for example, there is a higher risk of moiré patterning appearing when photographing areas of recurring patterns such as fabrics or in architecture.

One change to the capabilities of the sensor, however, is the ISO range. Where the D5300 has a native ISO of 100-12,800 that's extendable to ISO 25,600, the D5500 boasts a native ISO range of 100-25,600 without the need for the extended 'H1' setting. What this hints at is an improvement in image processing at the high ISO settings, although the D5500 does still feature the same processor as the D5300. That's not to say that the EXPEED 4 processor hasn't been slightly tweaked in some way, although it could be achieved from a modification of the RGB colour sensor.

The D5500 is well equipped with regards to video functionality, offering Full HD capture at 1920 x 1080p resolution with a variety of frame rates available including 60,

50, 30, 25 and 24p, as well as the option of other lower resolutions. Video can also be captured in the new 'Flat' picture style as first seen on the Nikon D810 and D750. This setting records a low contrast file without extra sharpening, giving the users the chance to add their chosen style to the video file in post processing.

DESIGN

As well as offering a more tactile experience when it comes to reviewing images captured with the D5500, the new touchscreen also sees a slight modification on how the camera is operated. Previously the 'i' button was housed on the top-plate, however this is now moved on to the rear of the camera just above the d-pad. This not only makes it easier to reach when shooting, but also places it alongside the touchscreen. This is convenient as the touchscreen allows for alteration of a host of the camera's shooting settings, with a simple tap of the setting to select and then tap in another area to modify.

While this is not only convenient for those familiar with touchscreen technology, it's also important for general users as the D5500 is somewhat lacking physical controls, in the main owing to the camera's small size and entry-level status.

It's not just standard camera setting adjustments which can be modified through the LCD screen, as the D5500 also offers a range of custom adjustments which can be assigned by the user. For example, it's possible to adjust the camera's ISO sensitivity by sliding your finger

The D5500 was used with the Nikon 35mm f/1.8G AF-S DX lens to create this shallow depth of field



across the LCD screen while shooting through the viewfinder.

In terms of the general build of the camera, the D5500 features a new construction – out goes the polycarbonate and metal chassis, replaced by a new single shell comprised of thermoplastic reinforced with carbon fibre. The benefits of this shell are mostly size based, with the D5500 being smaller than the D5300 and 60g lighter while maintaining the solid structural integrity of its predecessor.

Despite being physically smaller, Nikon has enhanced the design of the D5500 by giving it a larger and more pronounced handgrip in a style more akin to the acclaimed D750. As a result of this handgrip the model fits much better in the hand and gives a much more solid grip when carrying it with a large lens attached.

PERFORMANCE

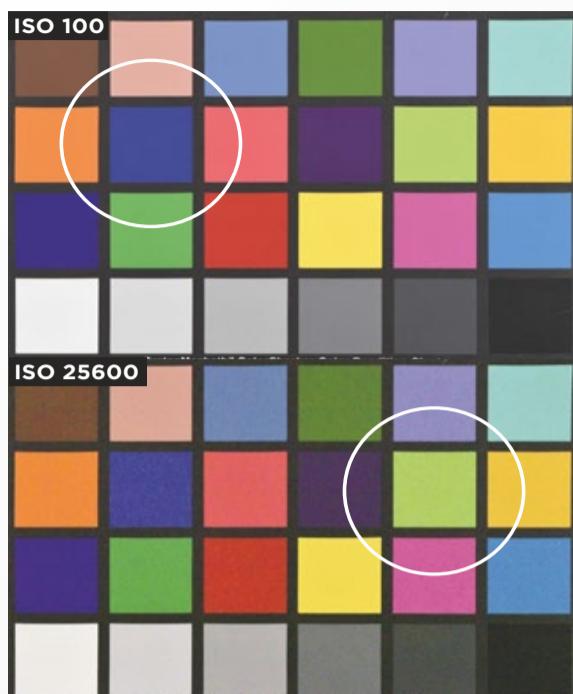
The Nikon D5500 features the same AF set-up as found in previous D5XXX models, comprising of 39 AF points complete with nine cross-type AF points, and powered by the Multi-CAM 4800DX focusing sensor. The fact that this set-up is retained is surely in some part down to its success in previous models, with the D5200 and D5300 performing well with regards to focusing.

The D5500 continues this tradition, delivering good focusing >>

From the retouch menu, users have the opportunity to convert images directly to black and white

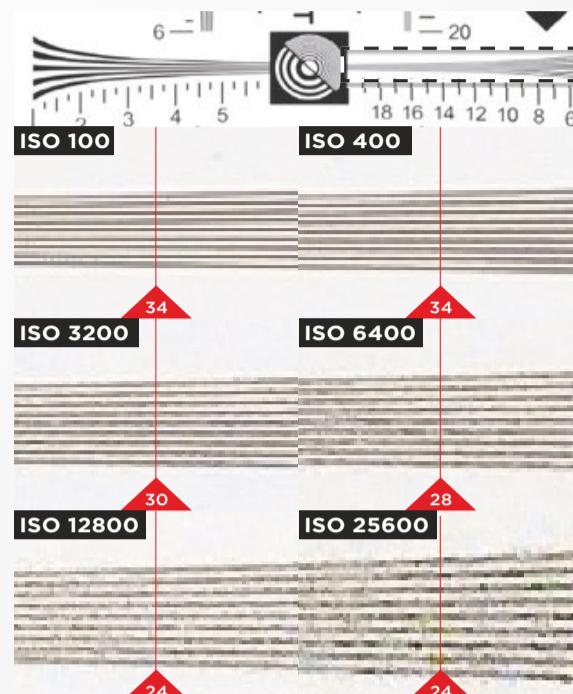


IMAGE QUALITY



COLOUR

Subjecting each camera to our colour chart test reveals any variation and differences in colour between Raw and JPEG file formats.



RESOLUTION

Our resolution chart reveals exactly how much detail a sensor can resolve and it's measured in lines per picture height, abbreviated as l/ph.



NOISE

The diorama is used to ascertain how image noise is handled through an ISO range. Some cameras produce cleaner results than others.

COLOUR AND WHITE BALANCE

As you might expect for a camera with the bulk of the same imaging tools as the D5300, the D5500 delivers excellent colour rendition. Even in dull and overcast conditions, as you'd conventionally find in an English winter, the D5500 captures tonally rich images with well-saturated colours. Our set of images taken in the lab revealed a very slight drop in colour saturation at the two highest ISO settings.

EXPOSURE

The D5500 features the same 2,016-pixel metering sensor as seen in the D5300, and like its predecessor it performs well and offers Matrix, Centerweighted and Spot metering modes. The trio of metering modes generally offer enough flexibility to garner the correct exposure across a range of scenes, and it's only in areas of particularly high contrast that the camera occasionally struggles with clipped highlights. This is easily rectified by dialling down

a few stops in the exposure compensation setting, however it would have been nice to see the D5500 inherit the 'Highlight-Weighted Metering' option from the D810 and D750.

RESOLUTION

Between ISO 100 and 400 the model captures around 34 lines per picture height (l/ph) and this detail only begins to drop as you push up to ISO 800 and beyond. At ISO 6400 we recorded 28 l/ph, which is consistent with the results recorded by the Nikon

D3300. At the ISO ceiling of 25,600, detail falls away and we could just make out 24 l/ph on our resolution test chart.

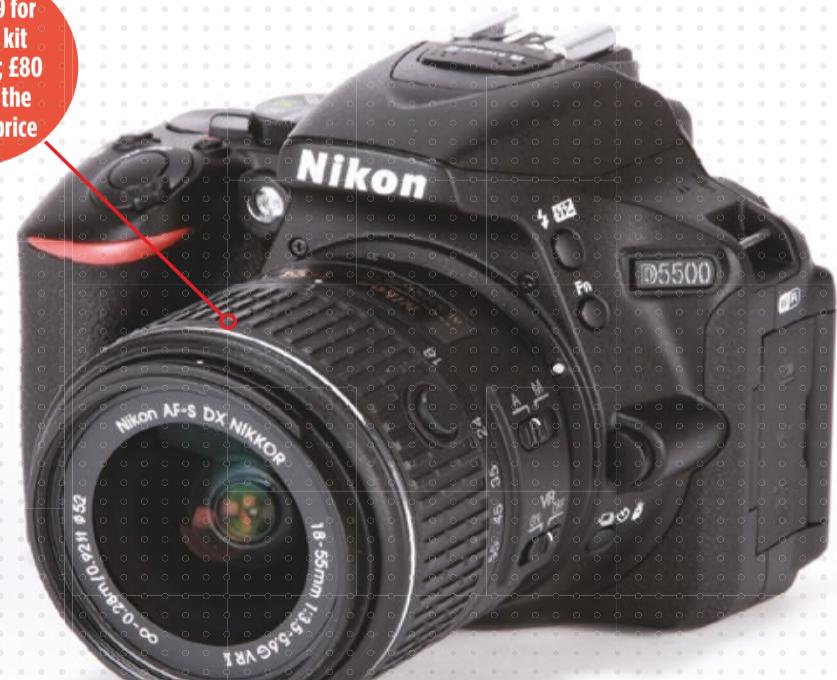
IMAGE NOISE

There's barely a trace of noise between ISO 100 and 400. Luminance noise does start to appear at ISO 800, yet it remains well controlled and doesn't have a destructive effect on the level of detail that's recorded. Luminance noise is ever more prevalent beyond ISO 3200 and more so beyond ISO 6400.



The layout and size of buttons at the rear are slightly different from the D5300

It costs £719 for the D5500 kit lens bundle; £80 more than the body only price



<< speeds in a range of conditions. Even in slightly more difficult lighting conditions the D5500 located the desired target in under a second by employing its bright AF assist beam. The only time when AF performance is somewhat tardy is when it comes to focusing with Live View deployed, although despite its slow speed it's still reliable in terms of its accuracy.

As mentioned previously, one of the headline features on the D5500 is the addition of a touchscreen. The good news is that the touchscreen functionality is generally responsive, with the touch control over shooting settings working particularly well. Having the option to pinpoint the autofocus point in Live View mode and fire the shutter by touch is a bonus and brings it a lot more into line with most CSCs in this respect. The ability to adjust basic functions when shooting video via the touchscreen is also welcome, because often, the action of turning physical dials on a camera when capturing video can result in unwanted camera shake. The other elements of the screen are also solid, with colour rendition pleasing, a good refresh rate and high resolution all combining to place the unit ahead of most entry-level models.

The viewfinder, meanwhile, is directly inherited from the D5300 and sports a 0.82x magnification and pentamirror construction. As a result, the viewfinder presents a reasonably large and clear view of the scene, though frame coverage is still at 95%, not the full 100% we've been longing for DSLRs to offer at this end of the market.

RAW V JPEG

As to be expected, the noise that appears in high-ISO images is far easier to remove and control if you shoot in Raw as opposed to JPEG. Raw files also allow for more detail to be pulled back in shadow and highlight areas when it comes to post processing. Although the in-camera processing the D5500 applies to JPEGs isn't as overpowering as some DSLRs, you can expect JPEGs to appear a touch sharper and more vibrant than Raws.



This image was composed in Live View, using the touchscreen to focus on the eyes before the shutter was fired

S P E C S

SENSOR	24.2MP APS-C CMOS sensor
OUTPUT SIZE	6000 x 4000 pixels
FILE FORMAT	JPEG, Raw, Raw+JPEG
COMPRESSION	Fine, Normal
SHUTTER SPEEDS	30secs-1/4000sec, bulb
EXPOSURE COMP	Yes, +/- 5EV in 1/3 or 1/2 steps
ISO	ISO 100-25,600
EXPOSURE MODES	PASM, Auto, Scene, Effects
METERING SYSTEM	2,016-pixel metering sensor
DRIVE MODE	5fps
MOVIE MODE	Yes; 1920 x 1080 @ 60/50/30/25/24p
DISPLAY	3.2in, 1,040k-dot LCD vari-angle touchscreen
VIEWFINDER TYPE	Optical, 95% coverage
FOCUSING MODES	Single (AF-S), Continuous (AF-C), Manual (MF)
MEMORY CARD	SD, SDHC, SDXC
CONNECTIVITY	High-Speed USB, HDMI type C, Wi-fi, 3.5mm mic port
WEIGHT	470g (including battery and memory card)
DIMENSIONS	124 x 97 x 70mm

V E R D I C T

There's a lot to like about the D5500, with a host of impressive features which belie its entry-level status. First of all is the camera's image quality – it's capable of producing a very high standard of image quality with reliable metering, white balance and noise control to a level above its standing. Adding to this is its impressive focus performance, which is only let down slightly when you switch across to Live View mode.

It must be said that these impressive elements of the performance were also present on the D5300 – somewhat unsurprising when you consider how much of the inner workings the two cameras share. Regarding improvements over the D5300, the touchscreen is certainly the most welcome. The design enhancements prove successful too, with the pronounced handgrip giving the camera a more comfortable feel in the hand. It'll help bring the price of the D5300 down and my lasting impression is that it's a welcome addition to Nikon's range. **CMR**

PROS

- Removal of optical low-pass filter results in excellent detail
- Good colour rendition
- AF performance
- Excellent handling

CONS

- Absence of GPS
- Some buttons at the rear are on the small side
- 95% optical viewfinder coverage

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

19/20

IMAGE QUALITY

18/20

VALUE

18/20

WDC RATING



MY DIGITAL CAMERA

READER
GALLERY

Rod Hanchard-Goodwin

EDINBURGH, SCOTLAND

I bought my first camera in 2001 which was a Canon IXUS with a 2MP sensor. After winning a photo competition I bought my first DSLR which was a Canon 450D in 2007.

My passion lies with seascape and long exposure photography. I'm completely self-taught and run tuition specialising in my long exposure techniques.

www.bluefinart.com



ROD USES A

CANON EOS 6D

I recently upgraded from a Canon 7D to the 6D. I have always wanted to make the transition from APS-C to full frame and the 6D seemed very good value for money and within my reach. It's a camera that feels very compact yet robust in the hand and is surprisingly light. The menus are very intuitive too and I like the way each category is contained within one screen.

The standard noise handling is very good up to about ISO 1600 and I like the ability to drop down to ISO 50, which is useful for long exposure work. When I try to pull detail out of the shadows it has a tendency to bring out noise, so I usually take two exposures and then merge them together in post production.

The Wi-fi is a great feature as you can control and download images directly to your phone using the DSLR Controller App. I'd highly recommend the 6D to anyone who is looking to buy their first full frame camera and likes shooting long exposures.



Bass Rock

I shot this from Tantallon Castle as the haar slowly burnt away revealing the iconic Bass Rock. I used a 10-stop B&W filter and converted to mono.

Canon EOS 6D with EF 70-200mm f/4 L IS USM, 25secs @ f/14, ISO 100



Centre of the Earth

I found this overflow at a reservoir in the Scottish Borders and thought it would make an interesting long exposure.

Canon EOS 7D with Sigma 10-20mm f/3.5 EX DC HSM, 39 seconds @ f/11, ISO 400



Scremerston Slabs

These rocks can be an excellent subject for long exposure work and can be found South of Berwick-Upon-Tweed.

Canon EOS 6D with EF 16-35mm f/4 L IS USM, 120secs @ f/14, ISO 250



North Queensferry

A shot from the town of North Queensferry. I used a 10-stop filter and Lee 3-stop ND grad.

Canon EOS 7D with Sigma 10-20mm f/3.5 EX DC HSM, 32 seconds @ f/11, ISO 320





Photography has always been a hobby for me, but in the past couple of years I've challenged myself to photograph the coastal landscape that's close to me in all its glory. I have some stunning locations on my doorstep and one of my favourites is Roker Pier: stunning to shoot in the early hours.

www.flickr.com/photos/deanftm/

DEAN USES A

CANON EOS 600D

I began my photography journey with an entry-level Canon EOS 1100D, which at the time served me very well. I used it for around 16 months before I considered upgrading and looked at the next step up in the EOS range. There are so many superb Canon DSLRs that it was a tricky decision, but I chose the EOS 600D, which was within my budget, and accepted the EF-S lenses I'd already purchased. I have discovered that it offers excellent image clarity and I'm a great believer in pairing it with my light-blocking ND filters to create longer exposures that can be difficult to achieve in high-contrast conditions.

Contrast, colour and tonal range are all handled superbly, even in JPEG files. To maximise the potential of the camera I'd recommend pairing it with the best glass that one can afford. Combined with anything less and you'll quickly find out, as I did, that it's a very unforgiving model and nothing but the best lenses will do to resolve the finest image quality from the 18MP sensor.



The Groyne Lighthouse

This unique lighthouse is located in South Shields on the River Tyne. Canon EOS 1100D with EF 18-55mm f/3.5-5.6 IS, 8 seconds @ f/22, ISO 100



Roker Sunrise

An early start presented the chance to shoot this sunrise of Roker Pier, near Sunderland. Canon EOS 600D with Sigma 17-70mm f/2.8-4 DC Macro OS HSM, 1/3sec @ f/16, ISO 100



Hendon Promenade

I wanted to capture the drama of the rough seas as the waves crashed over the slipway. Canon EOS 600D with Sigma 10-20mm f/3.5 EX DC HSM, 1/80sec @ f/11, ISO 200

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the power behind the picture



A PRO'S VIEW

Sony's α7 Series – the game-changing system that meets every photographer's needs

Capturing a great image takes more than just an eye for detail; it requires a camera that's capable of delivering the finest image quality in any given scene at any given time. Designed to strike the perfect balance between size, performance and the detail that's captured from a full frame sensor,

Sony's **α7** series cameras excel in each of these criteria. Whether you insist on a camera that surpasses all others in low light, one that focuses as quickly as you can think, or one that captures outstanding levels of detail, there's an **α7** series camera for your style of photography. Here, we talk to two pros to get their views on the **α7** series cameras they use day in, day out.

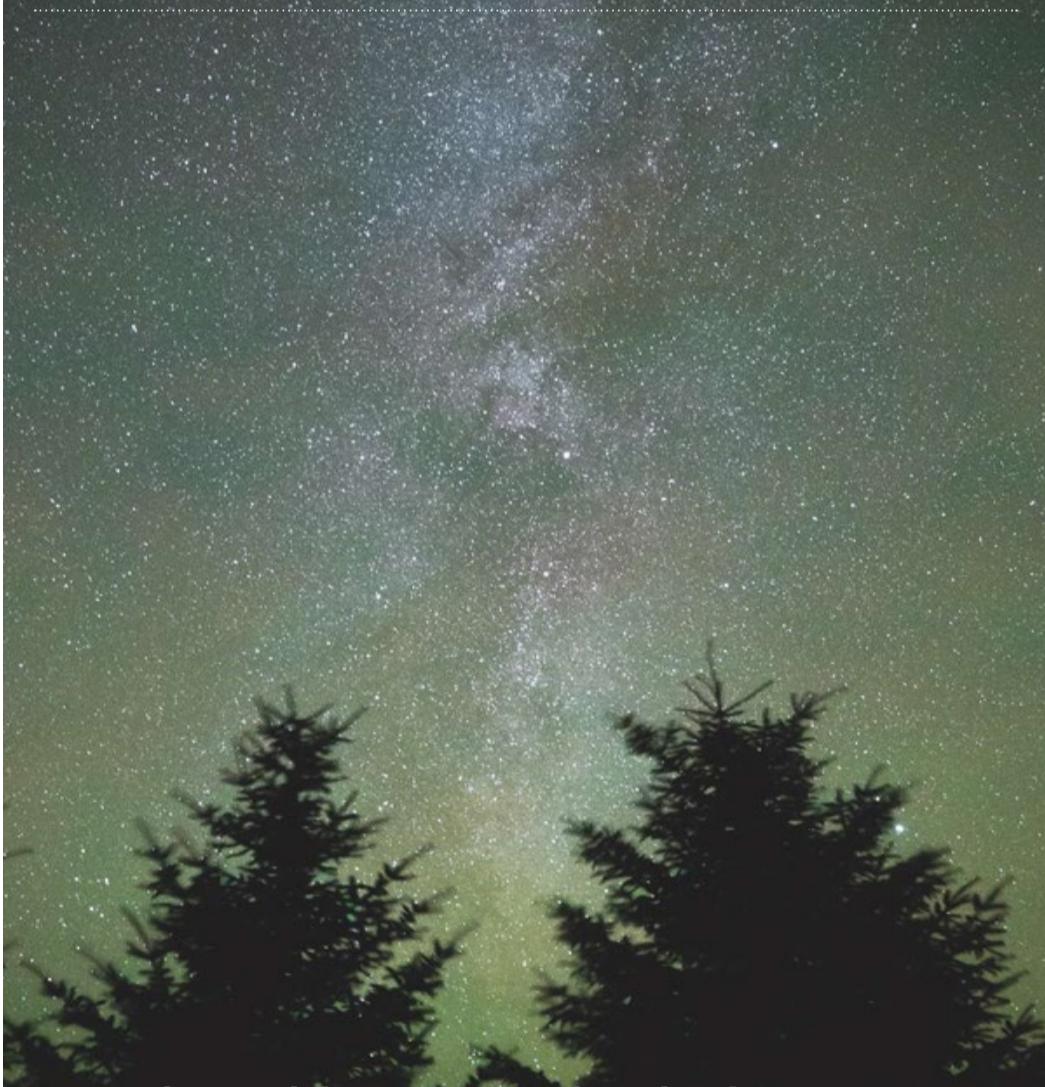


ANDREW WHYTE
Astrophotography



Whilst many photographers chase the light, Andrew Whyte's career path sees him pursuing darkness. As one of the UK's leading night photographers Andrew boasts a broad portfolio; his landscape astrophotography is as well-known as his abstract light paintings. Andrew's images and techniques have been widely published and he continues to develop a diverse list of commercial clients across the UK and overseas.

ASTROPHOTOGRAPHY WITH THE SONY α7S



"I've been blown away by the image quality I can capture in low light using the Sony α7S – the camera handles noise incredibly well"

The **Sony World Photography Awards** is the largest and most comprehensive photography competition in existence today. Open to photographers from all across the world of all ages and skill levels, the Awards are dedicated to supporting and cultivating photographic culture, recognising the very best in contemporary photography annually. The Awards showcase the winning photographers' images at a stunning exhibition each year in London. The 2015 Sony World Photography Awards Exhibition will be at Somerset House, London, 24th April – 10th May 2015. Visit www.worldphoto.org/sonyphotographyawards



**Sony
World
Photography
Awards**

Q You use the α7S to shoot astrophotography. Why do you think the camera is well suited to it?

A Ultimately, what makes a good camera for astrophotography is image quality. When we talk about low-light performance we're really commenting on the detail that's retained when using high ISO settings, and the low noise characteristics across the ISO range. Astrophotographers are unlikely to use the highest ISO rating of the **α7S** but the fact that it's there means that lower (but still very high) ratings – ISO 51,200, for instance – are well within the camera's capacity.

Q What have you been impressed by when you've been out shooting astrophotography with the α7S?

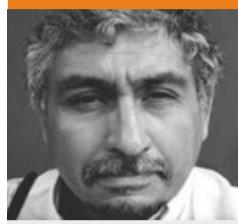
A The lack of image noise means I can increase my ISO rating and decrease my shutter speed to let me take more shots over the course of an evening – incredibly helpful if you've travelled to a specific location and have limited time to shoot there. Hooked up to a fast lens, I also find it very useful to use the Electronic Viewfinder to preview my exposure whilst I'm dialling in my settings.

Q What are the benefits of using a camera like the α7S?

A Astrophotography is typically shot at wide apertures to gather the most light, but wide apertures can introduce unwanted image artefacts like vignetting and lens coma, along with the further challenge of depth of field. The **α7S** allowed me to sidestep these problems by setting a narrower aperture in conjunction with a higher ISO rating, knowing this wouldn't diminish image quality.

ANTONIO OLmos

Portrait and Street Photographer



Antonio Zazueta Olmos is a photojournalist who has worked covering issues concerning human rights, the environment and conflict. He's also a dedicated editorial and portrait photographer whose images have appeared in UK broadsheet magazines including *The Observer Magazine*. He has worked extensively in the Americas, the Middle East and Africa, as well as for leading NGOs.



STREET PHOTOGRAPHY WITH THE SONY **α7**

Q Can you tell us why you think the **α7 makes the perfect camera for street photography?**

A When shooting street images, you want to go about unnoticed and the great thing about the **α7** is that it's small and unobtrusive. It's fast and has no shutter lag too. When the light is relatively good I set it to Auto ISO, dial in my aperture setting and shutter speed and away I go. The autofocus is incredibly fast which is essential for shooting in the street. A photograph may present itself to you and you will have a split second to get it. You don't want the autofocus to let you down and so far the **α7** has not disappointed me in any respect.

Q Tell us more about why you enjoy shooting street images with the **α7.**

A Besides the image quality and its quickness, I love the size and weight of the camera. Street photography requires a lot of time on your feet and I want to work light with the minimum amount of kit. The **α7** with a couple of lenses is all you need. I used the 35mm and the 55mm and I was set. Never did I feel burdened by my equipment.

Q What would you say are the best characteristics of the **α7?**

A The **α7** is light and quick. The quality of the images that come out of the camera are truly amazing. I don't think any camera compares.

"The Sony **α7 is the perfect accompaniment – for a full frame camera, it is small, light, powerful, but also incredibly simple to use"**



"The Sony **α7R gives me a great combination of resolution and control"**



α7 II

Sony made a seriously good impression with the **α7** and the recent arrival of the latest member in the family – the **α7 II** – takes it to the next level. It has a 24.3MP full frame sensor, an ISO range of 100-25,600, as well as an all-new five-axis image stabilisation system that reduces the risk of camera shake and enables you to shoot handheld images with shutter speeds as slow as 1/10sec.

Capable of a 5fps burst, the **α7 II**'s incredibly sophisticated and accurate autofocus system complements the robust build quality and superb all-round performance. In our recent review we said 'the **α7 II** adds even more appeal to what is one of the most compact and appealing full frame cameras around' and in true **α7**-series fashion, it picked up our prestigious WDC Gold Award.

PORTRAITS WITH THE SONY **α7R**

Q You regularly use the **α7R to shoot portraiture. What does it offer that makes it the best choice for this type of photography?**

A The resolution is out of this world and the colour rendition is superb. The detail on the subject's skin is amazing. Every texture is captured and the level of detail in the shadows is incredible. I find that it doesn't intimidate my subjects either. I am truly amazed by the quality of the Raw files.

Q How would you best describe the **α7R and what it's capable of?**

A I think it's medium format quality packed into a small camera. The power of the camera's sensor is

astonishing. And, because it is light and small, it allows me to work very quickly. I don't feel weighed down by the camera in the slightest.



Q What would you say is the biggest appeal of the **α7R?**

A The camera packs a lot of imaging power in the perfect sized body. Portrait photographers who normally shoot with a bulky camera will instantly be attracted to the **α7R**. It is small and light but gives you the same results without the cost or the weight.

BIG TEST

PANASONIC LUMIX TZ70

The Panasonic TZ70 is the latest in a long line of successful travel compacts, looking to build on the performance of its predecessor with several key upgrades

TESTED BY • JON DEVO



Compact

12MP
MOS
SENSOR

3in
SCREEN

80-
6400
ISO

£349
BODY ONLY

ESSENTIALS

The 'travel zoom compact' market is one of the most popular around thanks to the combination of a long focal range and an advanced specification, all in a body which is both lightweight and portable.

The sector itself was, arguably, established by Panasonic itself back in 2006 with the TZ1, and since then the manufacturer has continued to hold its place at the top of the tree with a succession of popular models.

The TZ70 follows on from last year's TZ60 - a camera that picked up wide acclaim thanks to the combination of a versatile lens and the addition of a new electronic viewfinder. The latest model doesn't feature any headline specification changes, although it does boast a re-engineered sensor with a view towards improving image quality. Is this change enough to warrant the upgrade, or hold Panasonic's position atop the travel zoom tree? Let's take a closer look and find out.

FEATURES

As already mentioned, the headline change to the TZ70's specification in comparison to its predecessor concerns the model's sensor. While the TZ60 featured an 18.1MP sensor, the TZ70 now boasts a resolution of 12.1MP. The actual physical size of the sensor remains the same as before at 1/2.3in - and as a result the size of the photosites are larger. The benefit of this change in resolution should see the TZ70 handle noise better at higher ISO settings, as well as improve image quality on the whole.

The sensor features an ISO range of 80-6400, which itself is an improvement on the TZ60 that could only shoot as low as ISO 100 and had to be extended to reach ISO 6400. The TZ70 also delivers full HD video capture at a resolution of 1920 x 1080, with the good news for videographers being that this can be saved in AVCHD and MP4 formats. Video capture functionality is further boosted by the presence of two slow motion capture modes, including the ability to capture 100fps at 720p, or even 200fps in the much lower quality VGA (640 x 480) mode.

Alongside the range of video capture modes sits a welcome timelapse mode, offering the ability to capture a changing scene over a period of time in full HD resolution.

The sensor is paired with the Panasonic's Venus Engine, an image processor which aids image capture and also delivers some impressive shooting statistics. These include a

continuous shooting speed of up to 10fps with fixed AF, or a slower rate of 6fps with AF tracking enabled (although this is only for a period of six frames).

In terms of the camera's optics, the TZ70 features a Leica Elmar lens covering a 30x optical zoom ranging from 24-720mm in 35mm equivalent terms. The lens is supported by Panasonic's five-axis hybrid OIS stabilisation system to ensure sharp images are captured throughout the extensive focal range. The TZ70 also features Wi-fi and NFC functionality for easy connectivity to either a smartphone or tablet, although the model does dispense with the previously-present GPS connectivity.

Another major improvement has been made to the TZ70's viewfinder. While its predecessor featured a 0.2in, 200k-dot viewfinder, the TZ70 now features a 1,166k-dot Live View finder of the same size. The TZ70's LCD screen, meanwhile, has also been upgraded. While it's not as significant as the EVF upgrade, the rise in resolution from 920k dots to 1,040k dots should certainly see some real-world improvement.

DESIGN

In terms of the TZ70's general appearance, it's incredibly similar to the TZ60. In fact, it's quite difficult to tell the two cameras apart until you begin to look at them under closer inspection. The subtle difference in design should see the TZ70 handle slightly better, but is this the case?

To begin with, the model features a more pronounced grip than its

predecessor and, although this does result in a slightly wider body, it makes the camera more comfortable to hold in the hand. The top-plate is also slightly more angular, with an overall chiselled design that is particularly attractive in the black and silver iteration of the camera.

The TZ70 is also three grams heavier than its predecessor, although when you hold the two at the same time it's impossible to tell the difference. The model also features a control ring as with its predecessor, one which is well toothed for a good grip once you're turning it. It is a smooth turning control wheel rather than the clicking variety however, and as a result it can be quite hard to tell when you're changing settings.

One welcome addition to the new model is the presence of an eye-sensor accompanying the EVF. This allows for the improved viewfinder to be activated by simply bringing the camera up to your eye, and thus allowing the hand to always be free for shooting.

PERFORMANCE

The TZ70 utilises a 23-zone contrast detection focusing system with a broad range of focusing modes, while in low light a strong red AF assist beam aids focus acquisition.

In practice the focus system performs well, proving both accurate and prompt in focusing on moving targets such as wildlife. The camera struggles slightly if shooting against a textured background, although this can be avoided by using more



Colour accuracy is reliable, while there's enough detail from the 12MP sensor to produce A3 sized prints

area-specific focusing modes. The TZ70's focusing performance does begin to slow noticeably as you progress through the zoom range to the full telephoto end of the zoom; though at the wide end of the zoom, performance is solid and responsive.

One of the major areas where improvement has been made on the TZ70 is the camera's EVF. Although it's the same physical size as its predecessor, the resolution sees an almost six-fold increase. As a result, the unit delivers a pleasingly clear view of the scene during image composition. It also benefits from a clear overlay of the shooting settings being used that can be useful if you're looking to make changes to these on the fly. Unfortunately, owing to its relatively small size and the absence of strong contrast, it can still be a touch difficult to accurately view highlight detail.

The presence of an automatic eye-sensor is of benefit here however, as you can now easily and intuitively switch between the EVF and the LCD screen when shooting and are no longer required to use an LVF button as found on the TZ60.

The LCD screen itself now features an AR coating for improving visibility in bright conditions, while the screen also delivers a pleasing level of brightness in general.

One often overlooked area of performance that can make a



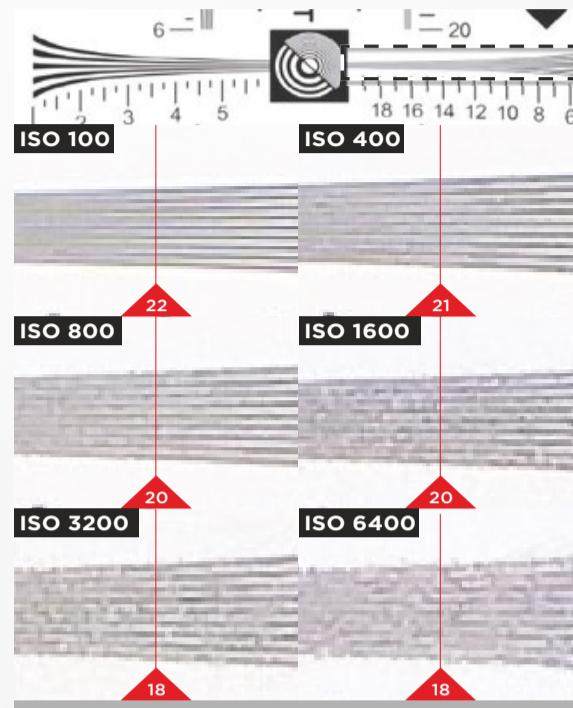
This challenging high-contrast scene was handled admirably by the TZ70's metering system

IMAGE QUALITY



COLOUR

Subjecting each camera to our colour chart test reveals any variation and differences in colour between Raw and JPEG file formats.



RESOLUTION

Our resolution chart reveals exactly how much detail a sensor can resolve and it's measured in lines per picture height, abbreviated as l/ph.



NOISE

The diorama is used to ascertain how image noise is handled through an ISO range. Some cameras produce cleaner results than others.

COLOUR AND WHITE BALANCE

On the whole the TZ70 is a reliable performer when it comes to white balance and colour accuracy. Just occasionally I noticed there were some issues with regard to colour shifting from one exposure to the next, however this only happened in some instances and isn't enough of an issue to put you off the camera.

With this in mind it's probably best to shoot either Raw or both Raw and JPEG wherever

possible so you have the option to control the white balance with precision in Adobe Camera Raw or your Raw conversion software of choice.

EXPOSURE

While on the whole the metering system on the TZ70 is reliable, there is the slight tendency for the camera to underexpose, which was noted when shooting in high-contrast conditions. This is easily enough rectified through the exposure compensation dial, or by utilising one of the TZ70's

area-specific metering modes.

RESOLUTION

One natural trade-off with the drop in the sensor's megapixel count in comparison to its predecessor is that the TZ70 is capable of rendering less detail than the TZ60. While this could be looked at with disappointment, a 12MP resolution is more than enough for most consumers' needs and an acceptable A3 print is by no means out of the question with some interpolation applied.

NOISE

One of the aforementioned benefits of the lower megapixel count is an improvement in handling of noise at higher ISO settings. The TZ70 displays this by handling noise capably up to ISO 400, and at ISO 800 the general levels of noise are still minimal. At ISO 1600 noise does begin to become somewhat of an issue, however it's not until ISO 3200 and 6400 that image quality really drops off where you break into the realms of colour distortion and detail smearing.



The eye-sensor beside the EVF detects the TZ70 being raised up to the eye



The control ring is useful for making quick exposure adjustments

« huge difference when spending a day shooting – especially on your travels – is battery life. Panasonic rates the battery life of the TZ70 at around 300 shots, and on the whole I found that it meets this estimation. During testing and in real terms this equated to five or six hours of fairly constant use of the full range of camera settings and shooting modes. Regrettably the camera doesn't support USB charging on the move though, so if you don't want to run the risk of being short of power, it's worthwhile considering a spare DMW-BCM13 battery that can be picked up for around £33.

One of the longstanding areas of appeal for the TZ range is the cameras' optical prowess, and the TZ70 is no different. Thanks to an impressive macro shooting mode the model is capable of shooting as close as 3cm to the subject at the wide end of the zoom, making it perfect for close-ups of flowers, insects and the like.

A more disappointing area of the camera's performance concerns the processing speeds in a few of the shooting modes. When shooting in Raw+JPEG file size and in low light mode, burst mode or high dynamic range mode the TZ70 takes a fair amount of time to process the resulting images. This delay is even more noticeable on the continuous shooting setting, with the worst culprit being the fastest continuous speed of 10fps. In this mode I discovered that an extensive burst of images has the tendency to freeze the camera for around 15 seconds before you're able to rattle out another burst and shoot again.

RAW V JPEG

At the time of testing, the Raw files weren't supported by Adobe Camera Raw so we used Panasonic's Silkypix Developer Studio to convert our files. The in-camera processing that's applied sees a subtle saturation and sharpness boost to JPEG files that isn't derogatory to the final result. When the high sensitivity settings are used, it's advisable to shoot in Raw and apply noise reduction in post to maximise the detail on show.



The extensive zoom range lets you get up close and personal with birds and other subjects in the far distance

S P E C S

SENSOR	12.1MP High Sensitivity MOS (1/2.3-type)
OUTPUT SIZE	4000 x 3000 pixels
LENS	30x optical zoom (24-720mm equivalent)
FILE FORMAT	JPEG, Raw, Raw + JPEG
COMPRESSION	Fine, Standard
SHUTTER SPEEDS	4-1/200sec (15, 30, 60secs available in Sky mode)
IMAGE STABILISATION	Yes, five-axis
ISO	80-6400
EXPOSURE MODES	PASM, Intelligent Auto, Panorama, Scene, Creative control
DRIVE MODE	10fps
MOVIE MODE	Yes; 1920 x 1080 @ 50/25fps
DISPLAY	3in, 1,040k-dot
VIEWFINDER TYPE	0.2in, 1,166k-dot EVF
FOCUSING MODES	One Shot AF, Continuous AF, AF area select, AF tracking, Manual
MEMORY CARD	SD, SDHC, SDXC
CONNECTIVITY	micro HDMI, USB, Wi-fi, NFC
WEIGHT	217g (without battery)
DIMENSIONS	110.7 x 64.6 x 34.4mm

V E R D I C T

The main impression you get with the Panasonic TZ70 is that it isn't a whole lot different from its predecessor, the TZ60. As is often the case in this situation though, that's not a huge issue as the TZ60 is a camera that impressed and continued the strong TZ series tradition.

The improvements that have been made are certainly worthwhile, with the improved EVF one of the most welcome alongside the drop in resolution of the sensor and therefore the better image quality at higher ISO settings. However, further improvement would have been welcome to take the camera up to the next level. The LCD screen could benefit from touch functionality, while the processing speed could do with being upped to improve upon the current laggy situation with regards to JPEG + Raw processing. That being said, the TZ70 is still a great choice if you're after a solid travel companion and is one of the best cameras you could invest in if you're looking for a camera to have on you at all times. **JD**

PROS

- Image stabilisation performance
- Presence of a control ring
- Reduction in resolution of sensor
- EVF upgrade

CONS

- Lack of touchscreen control
- EVF could be physically larger
- Mode dial a touch soft
- Some performance issues

FEATURES

19/20

PERFORMANCE

17/20

DESIGN

18/20

IMAGE QUALITY

18/20

VALUE

18/20

WDC RATING



D5300



I AM SHARING MY WORLD



I AM THE NIKON D5300. I am creativity in every pixel. I am sharing your creations around the world with my built-in Wi-Fi® and GPS. So you'll impress everyone with the new perspectives you'll find with my vari-angle monitor. Images will stand out in your social media network with my 24.2 MP CMOS sensor, 39 focus points and ISO up to 12,800. I am your creative outlook. www.nikon.co.uk

*Wi-Fi enabled smart device is required to share images.



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At the heart of the image



OUR ESSENTIAL GUIDE

TO

CAMERA BAGS



When you spend hundreds of pounds on a camera, it's vital you have a bag that offers a perfect blend of protection, space and comfort. We reveal the best options

WORDS • AUDLEY JARVIS

If you've spent time and money investing in your camera equipment then you'll require a bag that you can safely transport it all around in. This is where a good quality camera bag can help. Camera bags come in all shapes and sizes – from simple holsters intended for a single compact to reinforced rucksacks designed to accommodate full-frame DSLRs with an assortment of

lenses, flashguns and other useful equipment.

The size of bag that's right for you will depend on the amount of equipment you own, and how much of it you want to carry around with you at any given time. Get one that's too small and you may well face some tricky decisions as to what to leave behind. On the other hand, get one that's too big and you may find it overly cumbersome –

especially if you're out and about all day with it strapped to your shoulders. For this reason you may eventually want to consider investing in a couple of camera bags: one that can carry everything, and one for when you want to slim down your equipment to the bare minimum.

Either way, the first thing to do is to draw up a list of all your camera equipment. This will enable you to get a good

idea of the kind of size you should be looking for. Don't forget to factor any imminent purchases into the mix too. Once you have this list, you'll also need to consider what kind of camera bag design is right for you. Over the next few pages we'll take a close look at all of the individual bag types, and offer practical advice on how to get the most from one of the most relied upon camera accessories you'll ever buy.

TYPES OF CAMERA BAG

There are many different types of camera bag on the market, each of which offers its own set of strengths and weaknesses. Popular designs include compact pouches and belt holsters, waist belts, shoulder bags, backpacks, rolling cases and sling-type bags.

Pouches are the smallest type and are generally designed to carry no more than a small compact in. They can usually be attached to a belt to keep them within easy reach, freeing up your pockets and negating the need to fumble around inside a bag every time you want to take a picture. Waist belts are generally a little bit bigger than pouches, making them ideal for superzooms, bigger compacts or even a small Compact System Camera (CSC).

Moving up in size, shoulder bags – sometimes also referred to as ‘messenger bags’ – are usually (but not always) big enough to carry a DSLR or CSC body plus a couple of lenses. They differ from backpacks in that they employ a single strap that rests on one of your shoulders. The advantage of shoulder bags over backpacks is that they are much easier to access as you don’t have to remove the bag from your shoulders to get into it. On the flipside they are generally not as spacious as backpacks and can also unbalance you or get in the way when shooting, especially if you have a lot of weighty

INTERNAL COMPARTMENT

You'll want to make sure this is a suitable capacity to transport all your cameras and lenses safely



equipment stored inside.

Sling bags are a kind of halfway house between shoulder bags and backpacks. The main compartment is usually styled like a backpack, however they are fitted with a single diagonally positioned strap that allows them to be worn like a backpack but also rotated around to your chest so that you can quickly access

the storage compartment without having to remove the bag completely. They sometimes come with a hip belt for added comfort.

WHAT TO LOOK FOR

While camera bags differ in size and design there are a number of things common to them all that you should pay particular

PROTECTION

If a bag doesn't provide enough internal protection your kit is at risk of crashing around in transit



TABLET STORAGE

Space for a laptop or a tablet is very useful, but make sure it's padded for maximum protection

attention to. Robust outer materials and adequately padded internal compartments are the two most important things to look out for. Find out if the outer material is waterproof or shower-proof, as you really don't want any of your equipment getting wet inside it. Many bags come with a built-in rain sheet that can be pulled out and wrapped around the bag to keep the contents safe in really bad weather. Internally, the best bags come with modular internal compartments that can be rearranged the way you want using pads and Velcro fasteners. This allows you to set the bag up in a way that prevents anything from moving around inside.

If you're looking for a backpack or sling-style bag, check to see if it comes with a waist or a chest strap, as these can help to make a heavy bag much more comfortable over the course of a long day. Last but not least, check for outer pockets and external straps that can be used to carry small accessories, tripods and

TRIPOD HOLDER

A must-have if you're hiking for miles and want to keep both of your hands free



COMFORT

For maximum comfort from a backpack, make sure it has wide shoulder straps, a waist strap to improve stability of the bag on the move and also a sternum strap to add extra comfort to the shoulder straps. A well ventilated material will also help reduce perspiration

suchlike. Many bigger bags also feature a bespoke laptop pouch, which can be useful.

COMFORT & CARE

Manufacturers go to great lengths to make their bags as comfortable as possible. Ideally, you should try one on before buying to see how it feels. If you can't do this then the most important things to look out for are wide shoulder straps and adequate padding around the main contact areas. Avoid larger bags with thin, unpadded straps as these will likely dig in under weight. The use of breathable fabrics and mesh in the main contact areas is also worth looking out for, especially on the shoulder straps and where the bag rests against your back. More expensive backpacks tend to have raised straps, deep ridges or even a suspended mesh panel in order to improve ventilation and avoid 'sweaty back syndrome'.

To help make your camera bag as comfortable to use as possible be sure to pack it carefully, distributing the

weight evenly. Should your bag get dirty out in the field, clean it as soon as you can and don't leave it to fester – cleaning it will prolong its lifespan.

BUDGET

As with all camera equipment and accessories you will ultimately get what you pay for. So it pays to invest as much as you can in a decent bag, even if

RAIN COVER

Should you be caught out in a shower, a rain cover will prevent the inclement weather reaching your expensive kit



BAG ACCESSORIES

Once you've secured a bag that's right for you, then you may want to consider adding some useful accessories. Chief among these are a set of small padlocks that you can use to secure it from would-be thieves. Should your entire bag be stolen, then you may want to consider a miniaturised GPS tracking system.

There are plenty of battery-operated mini GPS devices designed for cars already on the market that could give you a crucial head-start on bag snatchers, while a start-up company called Locca (www.locca.me) is set to release a GPS tracker that could be easily hidden inside a bag.

Other useful accessories to consider include pouches that can be attached to your bag in order to carry additional accessories – from filters to flashguns, or perhaps just a water bottle. Last but not least, if your bag doesn't already have one built-in, then a rain cover is all but essential.



it means having to save up a bit longer. Buying a poor quality bag will not only put your equipment at risk, it'll probably wear out and need replacing before long too. Spend a bit more and you'll get something constructed from more robust materials that will help to keep your equipment safe. In addition, more expensive bags also tend to come with more durable zips and better quality padding. As a general rule of thumb, bags costing over £100 are generally of good quality.

ZIPS

Look for large zippers that run around the bag smoothly. The last thing you want is for these to fail in the field and you can't close your bag

PADDING

Arrange your internal dividers carefully so that your kit has padding on all four corners and is a snug fit to prevent it from moving around

Our round-up of the best bags on the market

Now that you know exactly what you're looking for from your next camera bag, it's time to start looking at the different options from all the manufacturers before making your final decision. With hundreds of bag options out there, it's not easy to know which bags are recommended, so over these pages we've picked out the best of the best from our recent reviews. Whether you're after a messenger bag for day trips, a backpack for longer photographic adventures, or a rolling bag for transporting your kit around the world, there's a bag amongst this round-up that's perfectly tailored for you and your style of photography.



Vanguard Heralder 33 £92

WWW.VANGUARDWORLD.CO.UK

Vanguard's Heralder 33 messenger uses space to its utmost potential. You can fit a great deal into it without it feeling overly heavy or bulky. Featuring a range of padded compartments, it offers the right balance of protection and organisation. There are also pockets and zips to store accessories, memory card pockets at the top, and a laptop compartment. Designed for easy access, it has a press top, allowing you to reach into the bag and find equipment without having to open it. It'll accommodate one pro DSLR with grip, one additional body, five to six lenses (up to 70-200mm f/2.8); plus a tripod and other accessories.

KEY SPECS

INTERIOR DIMENSIONS	33 x 16 x 28cm
OUTSIDE DIMENSIONS	42 x 27 x 35cm
WEIGHT	1,620g



Lowepro Pro Runner X450 AW £219

WWW.LOWEPRO.CO.UK

The unique design of the Pro Runner sees it convert quickly and easily from a backpack to a rolling case – perfect for photographers who'd like to roll their kit through airports but have the flexibility of carrying their kit on their back when out in the field. It holds a DSLR with a 300mm f/2.8 lens attached, with space for an additional four to six lenses and there's a checkpoint-friendly 15.4in laptop sleeve too. An all-weather cover, hideaway tripod mount system and well-padded interior complement the superb design. While not cheap, the X450 is a dual-purpose bag, well suited to photographers who travel.

KEY SPECS

INTERIOR DIMENSIONS	32.5 x 16 x 44.5cm
OUTSIDE DIMENSIONS	35.5 x 32 x 51.5cm
WEIGHT	4,700g



Manfrotto Unica VII Messenger £80

WWW.MANFROTTO.CO.UK

This spacious yet lightweight messenger-style bag features a top zip that runs along the length of the bag enabling easy access on the fly. Internally, the bag is big enough to store a mid-range DSLR with a small telephoto lens attached, along with a couple of spare lenses and a flashgun. Two padded dividers are supplied, although these can only be attached to one side of the main compartment. There's also a separate laptop pouch that's big enough for a 15in MacBook. One neat feature is the compartment at the bottom of the bag that's designed to accommodate a compact travel tripod. Stylish looking, it's also water resistant.

KEY SPECS

INTERIOR DIMENSIONS	20 x 46 x 10.5cm
OUTSIDE DIMENSIONS	31 x 48 x 19cm
WEIGHT	1,100g



Manfrotto Advanced Travel Backpack £109

WWW.MANFROTTO.CO.UK

Spacious enough for a mid-range DSLR with lens attached, a flashgun and up to two additional lenses, the Advanced Travel backpack still has enough room inside for a 15in laptop and yet doesn't feel overly bulky. In use the quick access side pocket allows you to remove your camera without fully opening the bag, while on the other side an expandable pocket can be used to house a small travel tripod. An external strap in the middle of the back takes care of full-sized tripods. Subtly styled and comfortable to wear, the bag's outer material is water repellent, although for added peace of mind a rain protector is also included.

KEY SPECS

INTERIOR DIMENSIONS	23 x 30 x 17cm
OUTSIDE DIMENSIONS	48 x 30 x 23cm
WEIGHT	1,425g



Lowepro Flipside 400 AW £86

WWW.LOWEPRO.CO.UK

The zip to the internal compartment on this spacious, weather-proofed backpack is located on the side where it rests against your back, giving your equipment added protection against thieves. With the padded waist belt attached you can also spin the bag around and access it without having to fully remove it. Internally, there's space for a couple of DSLRs with medium sized lenses, along with individual compartments for a couple more lenses and a flashgun. There's also a pocket on the back that's large enough to house a tablet or small laptop, as well as a tripod pouch that you can rest your tripod feet in.

KEY SPECS

INTERIOR DIMENSIONS	27 x 15 x 42.5cm
OUTSIDE DIMENSIONS	30.3 x 25.3 x 46cm
WEIGHT	1,600g





ThinkTank StreetWalker HardDrive £160

WWW.SNAPPERSTUFF.COM

If you're after a bag designed for use in urban and crowded environments you're looking at a good choice. Manufactured to the highest standard with strong zippers and excellent internal protection, it holds a pro-spec DSLR and 70-200mm f/2.8 attached, with room for an additional three to five lenses and accessories. There's a laptop compartment too for a 15in laptop and if you plan on carrying a tripod or monopod, it's possible to securely fasten it using the bottom front pocket and fastening buckle. A breathable mesh liner also helps to keep the bag cool against your back on the move.

KEY SPECS

INTERIOR DIMENSIONS	28 x 48 x 18cm
OUTSIDE DIMENSIONS	29 x 50 x 22cm
WEIGHT	1,700g



Ona Union Street Shoulder Bag £270

WWW.ONABAGS.COM

This is a stylish messenger bag that comes in a choice of colours: smoke grey, ranger tan and black. The bag is intended to take a DSLR kit or Compact System Camera kit along with a 15in laptop, accessories and small personal items. Hand-crafted from premium waxed canvas, with the details constructed from a combination of Italian leather and brass, the strap is soft but very strong and the padding to protect your camera is very thick – offering more protection than the vast majority of messenger bags that are currently available. You can also flatten its dividers for those occasions when you're not using it to carry cameras.

KEY SPECS

INTERIOR DIMENSIONS	25 x 39 x 14cm
OUTSIDE DIMENSIONS	28 x 41 x 14cm
WEIGHT	1,900g



ThinkTank Airport Roller Derby £305

WWW.SNAPPERSTUFF.COM

Made from high-quality nylon that's coated in durable water-repellent fabric, the Airport Roller Derby case is a premium option for the frequent flyer. Spacious and well designed, it has enough capacity for two DSLRs, up to seven lenses (depending on size), a 15in laptop, accessories such as chargers and some carry-on essentials. Depending on your configuration, it's also possible to fit a 400mm prime lens inside. The wheels roll smoothly, it makes transporting heavy equipment a lot less taxing than carrying it, while most importantly for this type of bag it complies with most airline restrictions. Although pricey, it's worth it.

KEY SPECS

INTERIOR DIMENSIONS	32 x 47 x 19cm
OUTSIDE DIMENSIONS	35 x 56 x 23cm
WEIGHT	4,800g



Lowepro Photo Sport Sling 100 AW £79

WWW.LOWEPRO.CO.UK

This sling-style bag is the smallest in the Lowepro Sport Sling range with the main compartment able to accommodate a mid-sized DSLR with standard zoom, a spare lens and flashgun, plus some filters or other accessories. A separate compartment located above can be used for further accessories, or perhaps a small lens. In use, the Sport Sling 100 AW sits comfortably on the back thanks to the wide padded strap and waist belt. The really great thing about the bag, however, is just how easy it is to access – simply undo the waist belt and the bag can be spun around to rest on your chest, with the zip offering direct access to kit.

KEY SPECS

INTERIOR DIMENSIONS	16 x 8 x 21cm
OUTSIDE DIMENSIONS	23.5 x 16 x 46cm
WEIGHT	800g



Domke F-5XB £80

WWW.DOMKEBAGS.CO.UK

This small but stylish shoulder bag features a built-in belt loop that enables it to be used as a waist pack. The main flap uses a Velcro fastening and opens to reveal a small front pouch and the main compartment, which can be divided via two Velcro pads. Available in a range of colours the F-5XB is the ideal size for a Compact System Camera and a couple of lenses, with enough space left over for some small accessories. At a push you could also use it to carry an entry-level DSLR with a standard kit lens attached, leaving just about enough space for a small prime or flashgun. The strap isn't padded, but it is wide and comfortable.

KEY SPECS

INTERIOR DIMENSIONS	24 x 10 x 15cm
OUTSIDE DIMENSIONS	25.5 x 11.5 x 18.5cm
WEIGHT	699g



Tamrac 5585 Expedition 5x £124

WWW.INTRO2020.CO.UK

This large, professional-grade backpack is big enough to house a full-frame DSLR with a 70-200mm f/2.8 lens attached, with plenty of space left over for another four to five lenses, a flashgun plus an assortment of filters and other small accessories. The bag also offers a 12in laptop pouch, plus two side pockets with colour coded markings to help you file used and unused batteries and cards. A tripod can be securely attached to the bag too. Fully water-resistant, it further benefits from raised dual-density pads to increase airflow around the wearer's back, along with chest and waist straps for efficient weight bearing.

KEY SPECS

INTERIOR DIMENSIONS	28 x 14 x 34cm
OUTSIDE DIMENSIONS	32 x 25 x 41cm
WEIGHT	2,054g



GLOXY POWER BLADE £130

WWW.PHOTO24.CO.UK

LED panels are being used more and more by photographers. The panels come in all shapes and sizes, and they are used to provide a bright and constant source of light. Unlike a hotshoe-mounted flashgun that's designed to emit a beam of light at a fraction of a second, the constant illumination given off by an LED panel can be great used for video, as well as stills, where it's often useful to check how lighting can affect a subject or a scene before the shutter is fired.

Unlike square and rectangular LED panels that tend to spread a large pool of light, the Gloxy Power Blade creates a narrower beam of light, consisting of 298 LEDs grouped together in a strip mounted within a tube. Just like the fictional lightsaber weapon as used in *Star Wars* films, there's a handgrip that provides a solid grip, with three buttons to control operation. These comprise directional up and down buttons to set the LED power output

between ten settings, and an on/off button that doubles as a mode button to set it to a variety of flashing modes rather than constant illumination. The top of the power blade unscrews, enabling the supplied cylindrical filter to be fitted to increase the warmth of colour temperature, while it's also possible to wrap different coloured gels around the tube, though these have to be secured with sticky tape.

Set to full power (20W), the Power Blade offered continuous light for just over an hour before the battery showed signs of starting to run out. The 1/4in tripod thread was extremely useful for mounting it to a tripod in the field, but I did have some difficulty operating the rather small and fiddly buttons when gloves were worn.

The Gloxy Power Blade is a very portable and powerful continuous light that's superb for illuminating subjects and, as I discovered, it can be an invaluable tool when painting with

light at night. It is such a bright light source that I found my best results with it were created at its lowest power settings, but it's great to have the extra power to hand when you need it. That said, there is room for improvement to the handgrip, which could benefit from being rubberised and better sculpted for a better feel. After prolonged use, I also came to the conclusion that it would benefit from a large on/off switch as opposed to a small on/off button.

There may be ways to create your own cheaper LED strip panel, but it's unlikely it will provide the same rechargeable battery and power control as the Power Blade. These features, combined with its remote-control functionality and in-car charger, justify the price. If you don't want to spend £349 on Westcott's Ice Light, the Power Blade is a cheaper alternative and one that's made to last with a strong build quality. MT

IN-CAR CHARGER

The Power Blade comes supplied with a very useful in-car charger, allowing you to recharge the battery on the move between shoots.



"The Power Blade is a cheaper alternative and one that's made to last"

★★★★★	
PROS	CONS
<ul style="list-style-type: none"> • Robust build quality • Remote control 	<ul style="list-style-type: none"> • Small and fiddly buttons • Weight

WEIGHT

The LED panel measures approximately 35 x 4mm and consists of 298 LEDs. The unit weighs 620g on the scales, which is 40g heavier than Westcott's Ice Light.

TRIPOD THREAD

The base of the Power Blade unscrews, allowing the battery to be removed and charged. The securing cap features a 1/4in thread, allowing the lamp to be easily mounted to a tripod or other mounting device.

NIXPLAY EDGE WIFI CLOUD DIGITAL PICTURE FRAME £200

WWW.NIXPLAY.COM

Digital picture frames are not a new phenomenon but the Nixplay Picture Frame takes them to a new level. As well as the ability to play images from an SD card and a USB Drive, the Nixplay can connect to a home Wi-fi network and allows users to create playlists to preview on their frame. Up to 2GB of photos and videos can then be synced with the frame at any one time and users can add as many photos and videos as they like to their Nixplay Cloud account. From their online account users can organise the images into playlists and choose which ones to sync to their frames. To add images to the account, users can either upload photos or video directly to the Nixplay account or take them from various places online including Dropbox, Facebook, Instagram, Flickr,

Picasa and via your own personalised email address. Nixplay also sets up their customers with an @mynixplay.com email address where they can be pushed to their very own slideshows.

The screen's resolution is very good and it boasts the ability to display 1080p HD video footage. Images are displayed in a 16:9 ratio as standard and there are settings to either fit to frame size or fill the frame. If you settle on the latter, fill the frame will animate the cropped part of the image.

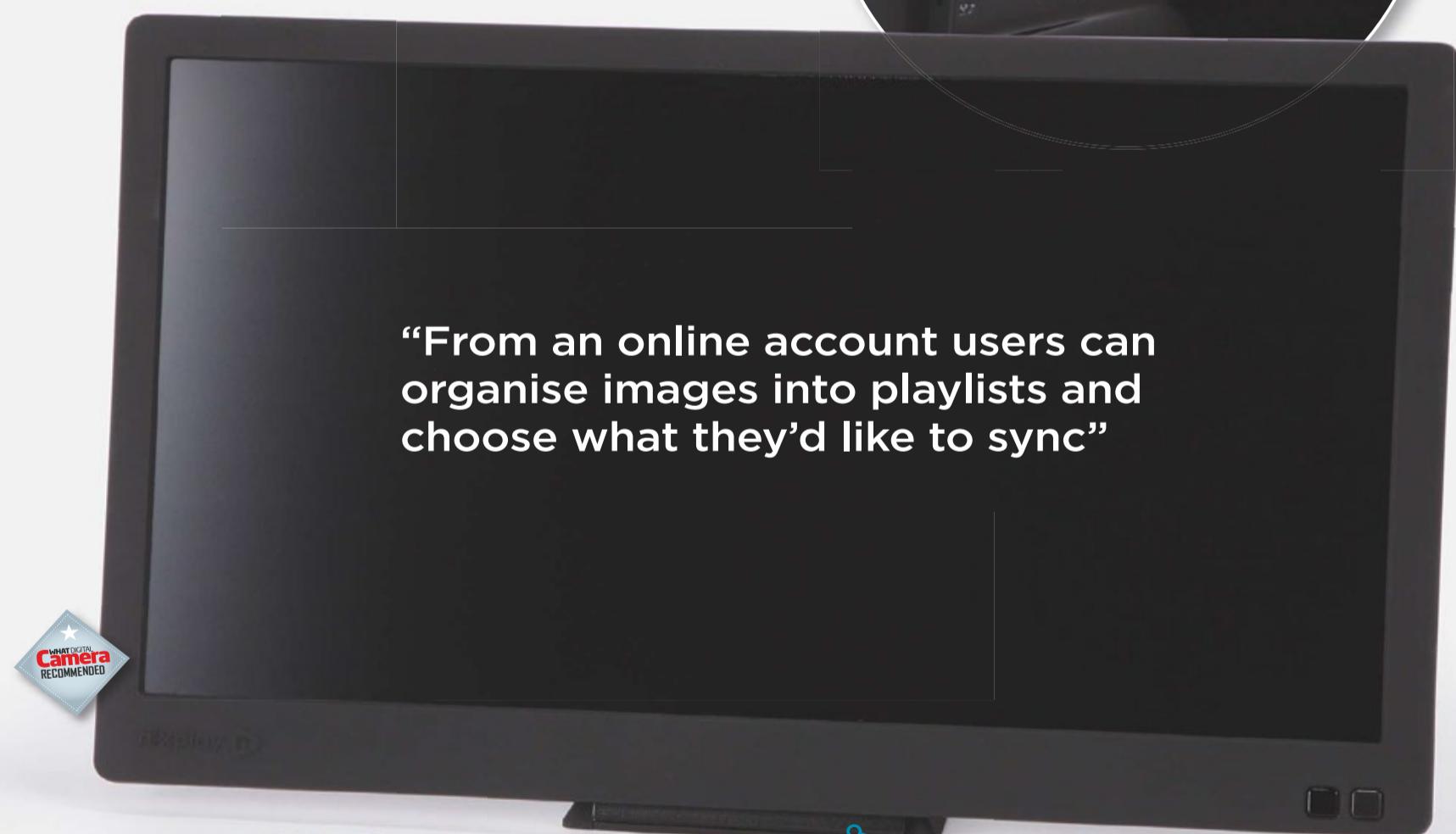
The matte screen used on the frame is brilliant and it displays a wide range of tones doing justice to any images that are displayed on it. Colours are vivid and details are clear to see, putting any budget photo frame to shame. There's no question that £200 is a

considerable amount to spend on a photo frame, especially when there are so many tablets available out there that offer just as good, if not better screens. That said, it works perfectly well and for anyone wanting to display a variety of images on a frame, it's one of the best we've used. **CMR**



PORTS

An SD card slot and USB slot can be found at the rear like most picture frames



“From an online account users can organise images into playlists and choose what they’d like to sync”

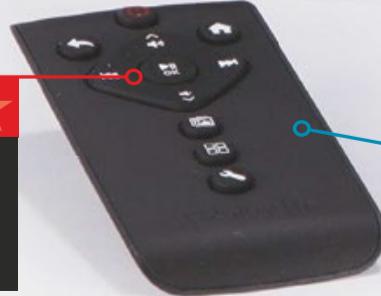


PROS

- Colour rendition
- Sharpness

CONS

- High price is hard to justify



REMOTE

Sit back, relax and control the screen's operation from the comfort of your own sofa!

STAND

Using a small stand, the frame can be positioned either in portrait or landscape format.

SIRUI EASY TRAVELLER ET-2204 WITH E-20 HEAD £300

WWW.SIRUI.EU/EN/HOME

It may be a relative newcomer to the UK market, but Chinese tripod maker Sirui is intent on making an impact, promising high quality at relatively affordable prices. Its Easy Traveller tripods are designed with portability in mind, with four section legs that fold up around the centre column for a shorter packed length. They come in two sizes and a choice of aluminium or carbon-fibre construction, with a ball and socket head included in the kit. Here we're looking at the larger carbon fibre model, the ET-2204.

The four-section legs have large, positive lever locks, and the sliding centre column has a twist lock.

Each of the tripod's controls are easy to operate when wearing gloves – something that's essential for landscape photographers. The legs can be set at three angles, including near-flat, and a clever sprung angle lock mechanism makes the tripod quick to set up. A short centre column is included for ground-level work, and tucks into its own pocket inside the well-made carry bag that comes in the box. Using it, however, requires

the head to be removed from the standard column.

The E-20 ball head has an independently locking panning base, which is marked at 5° intervals. It has no separate friction control, which means that care must be taken with heavy lenses, but that's to be expected at this price. All the locking knobs are captive, so they can't fall out and get lost.

The Sirui ET-2204 is a solid, well-designed tripod that feels like it should give years of service. It's easily capable of supporting a full frame DSLR and a 70-200mm f/2.8 zoom lens, and the head locks down with minimal sagging or drift, even with a heavy lens. At around 1.5m including the head it's perhaps a little less tall than I'd ideally like as a six-footer, but it can still hold an SLR at a reasonably comfortable height for viewfinder shooting, at least on level ground. Meanwhile the 43cm folded length and 1.72kg weight make it easy to carry around. At £300 for a kit, including the legs and ball head, it's excellent value for money. AW

"It is easily capable of supporting a full frame DSLR and 70-200mm lens"



PROS

- Solid design
- Positive lever locks

CONS

- Height
- Lacks friction control



WEIGHT HOOK

Allows a bag to be hung on the tripod for increased stability.



SPIRIT LEVEL

A bubble level on the camera platform aids straight horizons.

LEG WARMERS

Two legs have foam sleeves for when they are being carried.

PERFECTLYCLEAR V4.0 (ANDROID) £1.69

[HTTP://PLAY.GOOGLE.COM](http://play.google.com)

Photo enhancement on the go is the aim of the PerfectlyClear v4.0 app, a mobile device port of the Adobe Lightroom Plug-In developed by Athentech. Its big selling point is that at the press of a button, it can make up to 20 picture adjustments – from fixing lens distortion to tackling skin blemishes. You can also fine-tune elements, including Exposure, Depth, Vibrancy, Sharpness, and a multitude of portrait-centric tools. It is one of the most comprehensive mobile editing tools I've come across. Athentech has managed to condense some relatively complex algorithms and functions into an approachable, easy-to-use app that can give good results. The only issue is that if your device doesn't have a fair amount of built-in available memory, this processor-hungry application would cripple it. **JD**



★★★★★

LEEF SURGE USB DRIVE £18 (32GB)

[WWW.LEEFCO.COM](http://www.leefco.com)

Leef Surge is one of the smallest USB Flash Memory drives we have ever seen. Although the product has been available for some time, the company has revamped a few of its USB drives in a beautiful copper finish. For those wishing for more subtlety the Surge also comes in black and white variations. A choice of 8GB, 16GB, 32GB and 64GB are available and all of these are waterproof, shockproof and dustproof. I keep mine attached to my laptop, and edit images I intend to transfer on there. It's so small I barely notice it's there. **CMR**



★★★★★

PNY POWERPACK LM3000 £30

[WWW.PNY.EU](http://www.pny.eu)

I'll hold my hands up and admit that I am a sucker for a rechargeable USB battery pack, and I have a variety that I use for different situations. The latest is the PNY PowerPack LM3000, which has a 3000mAh battery. This is enough to fully charge an iPhone 6 or charge the Sony BX1 battery for the Cyber-shot RX100 twice.

The lithium polymer technology used by the battery means that the power supply is small in size. It is slightly larger than a credit card and is around 13mm thick, which means it is easily slipped into a pocket for everyday use. However, the really useful feature of the LM3000 is that it has both Apple Lightning and Micro USB leads built into either side, so you will never have to carry an extra cable with you.



PROS

- Small size
- Lightning and Micro USB leads

CONS

- Lead for charging is not built in



ALLOCACOC POWERCUBE & EXTENDED USB £21

[WWW.ALLOCACOC.COM](http://www.allocacoc.com)

It's hard to get excited by an extension cable, but the PowerCube that's designed by Allocacoc is an interesting solution to a problem most photographers can relate to. If you're anything like me and have multiple plugs for various devices at your workstation, it can be frustrating when bulky mains adaptors block power sockets, or the plugs themselves are so big they foul and prevent others being used. The PowerCube, as its name suggests, gets around the issue by offering four additional mains sockets on the exterior of its cube-shaped design. It comes supplied with a unique docking station that allows it to be easily mounted upside down beneath a desk; however, doing so does reduce the number of usable sockets to three. As extension

leads go, it's by far the most compact we've used and the pair of inbuilt high-power USB ports saves using a couple of extra plugs to charge mobile devices. If you'd benefit from a few more power sockets for your workstation and feel a 1.5m (5ft) cable length is adequate for your needs, look no further, the PowerCube is for you. **MT**



PROS

- Docking station
- Compact

CONS

- Cable length could be longer



HELP

Got a question? Need some buying advice? **Drop our experts a line**



£600 budget

STEVE CHEATHAM • VIA EMAIL

QI have been looking at getting back into photography for a few years now (I had various 35mm film cameras back in the day) but was always put off by the price of DSLR equipment. It was with great interest that I read your 'Money Saving Tips' feature in February's edition. Unfortunately it's left me with more questions than answers.

A used Nikon D5300 body can be paired with quality zooms



I have a budget of £600 and I'm looking for a camera, lens, tripod and bag. After using a Nikon D3100 a couple of times I am interested in the Nikon D5300. As you said in the feature, buying this model over the newer D5500 is a good way to save some cash. So I have three options, but I'm not sure which route to take:

- 1 Buy the camera complete with lens (Jessops, £519 after cashback) but this would leave very little for other items and I don't like the idea of being stuck with just the kit lens.
- 2 Buy the camera body new (Jessops, £454 after cashback) and then source lenses from elsewhere, maybe secondhand?
- 3 Buy the camera body secondhand (MPB Photography, £379) which would be quite a

saving and spend the remainder on new or secondhand lenses.

Also, if I buy the camera body only, what type of lens would be best for general photos and wildlife/landscapes?

AIf you find you are gripped by your hobby for the longer term you are most likely going to be upgrading your camera body fairly quickly, so to start with I would recommend you don't go overboard on a body you may soon outgrow and instead give yourself some creative flexibility by saving money to invest in more and better lenses. That said, to start with even if you go for the

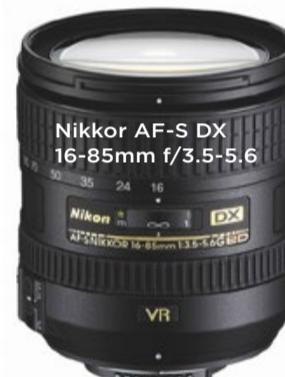
cheapest body-only option you will only have a couple of hundred pounds to spare for a lens – at least to start with.

Rather than settle for a standard kit zoom lens try to

aim for a good used deal on a quality standard zoom such as the AF-S DX 16-85mm f/3.5-5.6G IF-ED VR, which can be picked up for just over £200 in good secondhand condition.

The Tamron AF 17-50mm f/2.8 SP XR Di II LD Aspherical is also worth a closer look thanks to its bright constant aperture specification.

We'd opt for the non-VR version which is a better performer and it can be picked up in excellent condition for around £249. **IB**



Motorsport photography

STUMPIE • VIA EMAIL

QI'm a keen motorsport fan; mostly I take pictures of F1 cars and touring cars. I'm not part of the media and I don't work for anybody so I take pics from the stands. I'm a keen amateur photographer who started taking pictures seriously around a year ago, using a Sony A58 with a 55-300mm f/4.5-5.6 DT SAM lens. Towards the end of its reach the lens doesn't work as well as it does at, say, 250mm, with the AF struggling to lock on. Could you recommend a good lens? I'm also open to new body suggestions. My budget is limited to £1,000.

AThey are not easy to find, but a used Mark I Sony 70-400mm f/4-5.6 SSM G zoom lens should be under £1,000. The Mark II version is around £1,300-£1,500. The Mark I is a good performer and is consistent throughout the zoom range. Its main weakness is relatively unrefined bokeh but it has smooth SSM focusing and significantly more reach than your current lens. It also comes with a tripod collar so that you can attach it to a monopod – and it's a light-coloured lens so it looks like a pro optic! **IB**



Pentax Teleconverter Compatibility

LESLIE COX • VIA EMAIL

QI have a Pentax DSLR and regularly use it with my Sigma 120-400mm APO DG OS HSM zoom lens. This set-up is sufficient for the nature photography that I enjoy. There's an RSPB reserve just a few miles away from me and this is being restored back to its natural heathland from a disused conifer plantation in order to restore this rare habitat and to encourage heathland birds. The photographs I have taken of the heathland birds, woodlark, meadow pipit, etc are virtually unidentifiable due to the size of the bird and the distance away they are from the camera. There is little or no cover to get closer. The Sigma 150-500mm would be a more useful lens and the new Sigma 150-600mm more so, however it's not available in a Pentax mount.

The article 'Shoot better wildlife' in the January issue of WDC mentions teleconverters to extend the focal length of the lens mounted on the camera. I have made enquires, via the internet, to a couple of dealers and have had conflicting responses as to the compatibility of teleconverters with my set-up. One dealer informed me that only Pentax teleconverters work with Pentax

camera/lens combinations and another dealer said it would work. I was also told a Kenko teleconverter would and wouldn't work by different dealers. Can you please shed your expert opinion on the teleconverters or am I going to have to trade in my 120-400mm lens for the 150-500mm lens?

The advice Michael Topham gave me on the Pentax 100mm macro lens (which featured in the January 2014 issue of WDC) was very useful. I subsequently purchased the lens and am very pleased with the recommendation.

ATeleconverters certainly can be a useful aid to boosting telephoto reach with certain lenses but there are plenty of caveats. The host lens has to be a very good performer to start with, as you will lose brightness and optical sharpness and contrast with a converter attached; it's a compromise. Your Sigma AF 120-400mm f/4.5-5.6 DG is a reasonable lens for APS-C size sensor cameras like your Pentax but with a maximum aperture range of f/4.5-5.6 you will almost certainly encounter autofocusing unreliability with a 1.4x converter and it will be

more severe with a 2x converter. At 400mm you will get a boost to 560mm with a 1.4x converter but with a maximum aperture of f/8. You will also hardly be able to stop down without softening due to diffraction setting in. In other words, a converter for this lens is not really ideal. You also describe your target as being extremely small to start with even at 400mm, so a boost to 560m will probably not make enough of a difference. If you really want to improve the reach for your telephoto photography you will need a faster prime (non-zoom) lens, but these are often very expensive lenses. **IB**



Can I fit an old bellows unit with my Canon EOS 10D?

FOOT STEPS IN TIME • VIA FACEBOOK

QI found an old Helios Macro Bellows Attachment with Olympus OM fit in an old used goods shop and I could not pass it up. I have a Canon EOS 10D and I'm hoping I can get a converter ring for it. Will this be possible?

AWithout inspecting it personally I can't be certain but the likelihood is that it uses

T2-mount adaptors which are still readily available on eBay, for example. The T2-mount system pre-dates Canon EOS by decades but independent suppliers can provide T2 mount adaptors for Canon bodies and they aren't expensive. The more problematic question is at the other end of the bellows: is the Olympus OM mount fixed or also replaceable? It will be more difficult to change this

for an EOS-mount adaptor. On the other hand there is a huge selection of old OM-mount lenses you can choose from secondhand. **IB**



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Camera for ceramic photography

TOMMYZULU • VIA EMAIL

QI am a craft potter and have bought a basic, cheap studio lighting set to take photos of my work (and the work of other potters in my club). The lighting has two softboxes and an umbrella 'toplight' and I already have a good graduated tone background. My first outing with this kit gave results that I was very happy with overall using my Panasonic TZ10 on a tripod.

But it only has autofocus and sometimes I might wish to focus on a different aspect of the subject. I don't want to spend much on a different camera – but I might be in the market for either a pre-owned DSLR or some other solution just to use in this connection. Suggestions as to what to look out for would be most appreciated.

AThe Panasonic Lumix DMC-TZ10 was a fine travel zoom camera for its day back in 2010 but, as you have discovered, its bias towards auto-everything can be limiting. However, you can force the camera to focus on a non-central portion of the

frame, though this is trickier without the touchscreen of later models. Your request for guidance on choosing a more suitable camera could result in hundreds of different answers, since I would need a lot more information, like your budget, personal preferences and other

factors. So I will speculate from the point of view of Panasonic, who very much hope their compact camera customers will eventually upgrade to one of their Lumix G Micro Four Thirds mirrorless Compact System Cameras. These are like DSLRs, so you can change lenses and you have a lot of manual control including focusing, and better image quality than compact cameras, but they are smaller and lighter than DSLRs. You should be able to adapt to these better, as the controls and menu systems are an evolution of those on your current camera. Of the current Lumix G range, you would probably be fine with the most basic model, the GF6 with a 14-42mm standard kit zoom lens, which you'll be able to pick up for under £300. **IB**



Panasonic's GF6 is a good choice for upgrading from a TZ10

New Compact, Bridge or SLR?

SALLYP • VIA EMAIL

QI am sadly without a camera at the moment (except for an old and very basic Fuji Finepix X7000 bridge camera which somebody kindly gave me as I didn't have a camera and needed one urgently), but I am hoping I will be able to afford a new one in the next couple of months.

I have previously owned Nikon DSLRs, but have also used a couple of Canons. I wasn't really fond of the Canons and much preferred the Nikons, which I found produced richer colours. I had to sell my last Nikon D3100 due to needing to fund my dog's operation when she had an accident.

So, now, as I have some money coming in a few weeks, I am trying to get some ideas

for a new camera. I don't know how much it will be yet, but it will be a minimum of about £150 and possibly up to around £400.

I was toying with the idea of a really good bridge camera, because I like the idea of not having to change lenses and having a wideangle lens which expands to a good long zoom, all in one. I know SLRs generally have better image quality, but I do find that the lenses are usually quite unaffordable for me and sometimes I find it is a pain having to change them. Obviously it is a minefield

nowadays with all the different cameras out there, but I want to narrow some down if possible. I would consider secondhand as long as it's in good condition and – if it's an SLR – doesn't have too many shutter actuations.

The best affordable bridge camera is the Panasonic FZ200



AIt does sound like a bridge camera would be best for you, and one which we have been recommending for the past year for people on a relatively limited budget is the superb Panasonic Lumix FZ200. You can buy these new for just over £300 and attractions include a bright 28-600mm equivalent zoom range, a really good optical image stabilisation system, good video support and good stills quality too. Noise reduction is a little aggressive when it's dark but this is a relatively minor point. All told, as a complete package you'll struggle to find a better camera in its class than the Panasonic Lumix FZ200, so we say go for it. **IB**

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Dale Hawkins

Used Equipment Manager

Dale, our used equipment manager, has over 30 years of experience in the photographic trade. Even though photography has changed hugely in the last few years he still has a soft spot for the more traditional sort of equipment, along, of course, with modern cameras and lenses.

He is particularly interested in the more serious equipment that's out there. Studio lighting, darkroom equipment, slide projectors and tripods are of particular interest, but he will consider pretty much anything!

If you do have any equipment, and you're not sure if it has any value, please feel free to give Dale a call. He will be more than happy to have a chat and give any advice that he can.

Thinking of downsizing? Do you leave your big at home because it's too ?

...or are you enjoying your and some so much that you'd like a ?

Are you frustrated having to change 1x and would like just

Maybe you've outgrown your and need to upsize to a ...or

Maybe you own a and haven't used it for ages... or you have an old and need the space?

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Upgrade to DSLR camera

NICOS • VIA EMAIL

QI want to buy a DSLR camera. I'm about to start studying art so photography is an almost daily activity. I have an iPhone 5 which has served me very well for photographs or photo-documentations for my subject. However, I have outgrown the iPhone and I want something that gives me more technical control over my photographs and better quality but, most importantly, will introduce me to options that iPhone cameras don't have. I've worked with DSLRs before so I know about the basics. My budget is around £900. As I think that it is unlikely I will find a new camera and lens with this budget, I am

open to deals or used lenses or camera bodies. I am not really a 'geek' about the technical aspects so new or older models are the same as long as it works for me. Video is a necessity although I may not necessarily need a wide zoom lens; 50mm and 70mm would be fine.

AThere are many possible answers to your question, so I will concentrate on fundamentals to help you make your own choice. A system camera which lets you change lenses and have full control over the camera is definitely what you need. It could be a DSLR or a mirrorless Compact System Camera and

with some diligent research you could probably get everything you need inside your budget selecting new items and certainly if you went for used gear. As you are starting out, my advice is to choose a good value camera body and spend more of your budget on a good lens as you may want to upgrade the body sooner than you realise. You should seriously consider a prime lens, a niche area which has taken off in the past couple of years. Check out the various focal length equivalence factors - so if you want a 50mm style standard lens for an APS-C camera, for example, you'd need a 35mm lens such as the one above. All recent system



A prime lens such as Sigma's 35mm f/1.4 DG HSM would make an excellent purchase

cameras offer Full HD video recording modes although some offer more frame rate options than others and almost all are limited to 30 minutes recording clip lengths to avoid European import tax hikes. First, take a read of our Buyer's Guide starting on page 60 to begin your research and find out the best for your budget. **IB**

Wideangle Lens for Canon 7D

SLEWIS • VIA EMAIL

QI have a Canon 7D and I want to purchase a wideangle lens for photographing landscapes. I am considering the following options:

- Tokina 10-16mm f/2.8
- Canon EF-S 10-22mm f/3.5-4.5
- Canon EF-S 10-18mm f4.5-5.6 IS
- Sigma 8-16mm f/4.5-5.6
- Sigma 10-22mm f/3.5

I'd like to keep the budget to £350 but I'm prepared to go up to £450. I am happy to buy secondhand too if it gets me a better lens for my money.

AYou could add to your list the Sigma AF 12-24mm f/4.5-5.6 HSM DG II, which is a full frame lens but works quite well on an APS-C crop

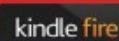
camera and still delivers good wideangle coverage. They are about £600 new but good-condition used examples can be found for around £400. If you later upgrade to full frame you wouldn't need to trade it in, though some of its flaws are masked by being used with an APS-C sensor body. Of the Canon EF-S options the better value bet is the new Canon EF-S 10-18mm f/4.5-5.6 STM IS which performs just as well as the 10-20mm but is a lot cheaper, if a lot more plasticky in construction. The Sigma AF 8-16mm f/4.5-5.6 DC HSM is a great super-wide performer

although performance drops a bit at the 16mm end. Both Sigma's 10-20mm designs are excellent and we can also recommend the Tokina 11-16mm f/2.8 AT-X Pro DX. **IB**



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A large aperture, f/2.8 standard zoom lens incorporating HSM and Sigma's unique Optical Stabiliser (OS) system. Offers superb optical quality, handling and great value for money.

Large aperture standard zoom lens, designed specifically for digital cameras with an APS-C size image sensor, provides high definition images throughout the entire zoom range. It has a compact and lightweight body with an overall length of just 91.8mm. The highest level of optical performance, with two FLD glass elements and three aspherical lenses, assures exceptionally sharp image quality.

Improve your editing skills

39 of the best Photoshop tips and tricks to help you edit your pics like a professional

PLUS Speed up your workflow

- Improve your shooting routine and work more efficiently
- Manage your workstation to prevent costly mistakes
- Catalogue and output your shots for maximum impact



Tips to

SPEED UP YOUR IMAGE EDITING

It's increasingly a fact of life in the world of digital photography that if you want your pictures to look their best you're going to need to spend some time in front of a computer editing them.

A lot of purists may have just spat out their coffee on reading that. There is plenty to be said for the art of 'getting it right in-camera', and we'd never suggest anyone

forgo learning how to use their equipment correctly. However if you learn to think of digital editing as a tool to augment your photographic successes rather than to compensate for your failures, then you'll find yourself more pleased with your output and you'll be a better photographer as a result.

Unfortunately, the sheer mass of buttons, widgets, commands and options available

in tools like Adobe Photoshop and Lightroom can be very overwhelming even if you've got some experience with the software, and even experts will say that after many years of use Photoshop still has the capacity to surprise them. Here we've compiled a few tips and tricks you may not have known that will make your editing easier, faster and more reliable.

The Photoshop shortcuts to use for fast photo editing

Sometimes it can feel like half the battle when working with Photoshop is simply locating the specific tool for the particular task you have in mind. One way to get around this is to keep a list of handy keyboard shortcuts. These are what they sound like – simple multi-key commands that instruct Photoshop to perform a single function. It can be a bit difficult at first to get into the habit of using them, but once you do you will never go back.

Here we list a selection of the basic process management shortcuts that will enhance the way you work. They're designed to make things simpler, more streamlined and safer.

TAB = SHOW/HIDE PALETTES

If you're finding your screen a little cramped and hard to work on, hit the Tab key to hide all of the palettes and give yourself more room to breathe. The moment you need them back, just hit the Tab key again.

CTRL + Z = UNDO

Made a mistake? Hit these two buttons and it's like it never happened! (Note: Mac users, always substitute the Ctrl key for the Cmd key.)

CTRL+SHIFT+W

= CLOSE AND GO TO BRIDGE

This is a neat, simple way of speeding up your workflow by minimising the amount of time you spend clicking between windows. This shortcut will close the file you are currently working on in Photoshop and send you back to Adobe Bridge, where you can quickly select the next image you want to load and edit. We use this shortcut all the time, so it's one worth practising.

CTRL + O

= FIT TO SCREEN

When we're editing it's common practice to zoom in and out, either by using the Zoom tool (Z) or by using the shortcut (Ctrl +/-). Hitting Ctrl+O will instantly put your entire photo in front of your eyes. This is a useful way to stay mindful of the overall 'feel' of an image. It's easy to get so caught up editing one detail that you don't realise that what you're doing doesn't fit the image until you've put in several hours' work.

CTRL + S

= SAVE

If you have to ask why then you definitely need to be told. Even in a program that autosaves, there is no excuse not to make hard saves on a very regular basis. The first time you learn this lesson the hard way – through a computer crash or similar misfortune – should hopefully also be the last time you make the mistake. The saying 'it's better to be safe than sorry' applies to editing, so make sure you do it frequently.



SELECTING YOUR TOOLS

Photoshop is all about tools, and one aspect of a strong workflow is being able to switch from tool to tool with speed and ease. Use these one-key commands to quickly pick up the tool you want.

One thing to note is that these commands denote tool groups, and will select the last-used tool within each group. So if you want to select a crop tool, and the last crop tool you used was Perspective Crop, then hitting the shortcut will reselect Perspective Crop. Holding the Shift key while hitting a shortcut will let you toggle through the different tools in any tool group.



V = POINTER

Used for selecting, positioning and resizing shapes.

M = MARQUEE

Used for selecting rigid shapes – different from the Rectangle tool, which creates them. Can be altered to select elliptical shapes.

L = LASSO

Works similarly to the Marquee tool, but selects shapes freehand. Requires some accuracy to be most effective – ensure you've got a decent mouse, or better yet a graphics tablet and stylus.

W = MAGIC WAND

One of Photoshop's most famous tools, the Magic Wand automatically selects pixels in an image based on tone and colour.

C = CROP

Cut the edges away from an image. Can be set at specific aspect ratios or unconstrained.

I = EYEDROPPER

Allows you to sample colour from one part of an image for use on another.

B = BRUSH

It may seem unassuming but seasoned Photoshopers will come to regard the Brush tool as one of their most trusted companions. See across for some more shortcuts involving the Brush tool.

S = CLONE STAMP

Copy one area of an image and paste it onto another.

E = ERASER

Changes pixels either to background colour or transparent.

T = TYPE

Used for adding text to an image.

U = RECTANGLE

Used for creating shapes. Rectangle is the default, though other options include ellipse, polygon, line and custom.

H = HAND

Move around an image document quickly.

Z = ZOOM

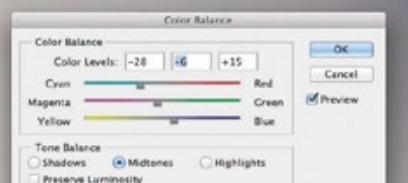
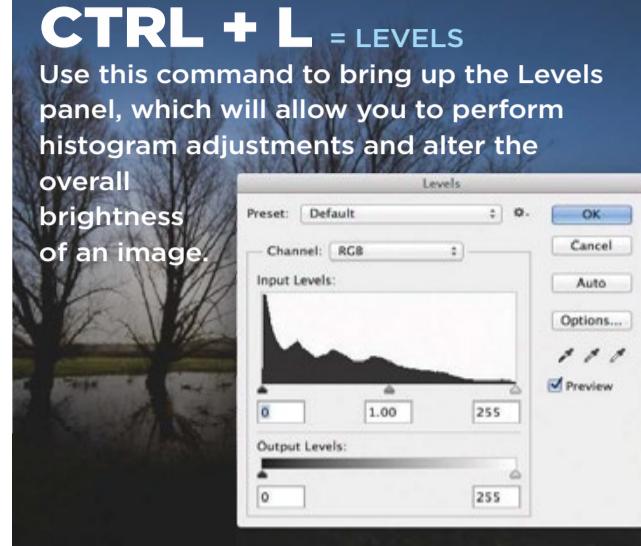
Move closer to or further away from an image.

THE KEY PHOTOSHOP PANELS

Here you'll find the shortcuts for the most frequently-used Photoshop panels

CTRL + L = LEVELS

Use this command to bring up the Levels panel, which will allow you to perform histogram adjustments and alter the overall brightness of an image.



CTRL + B

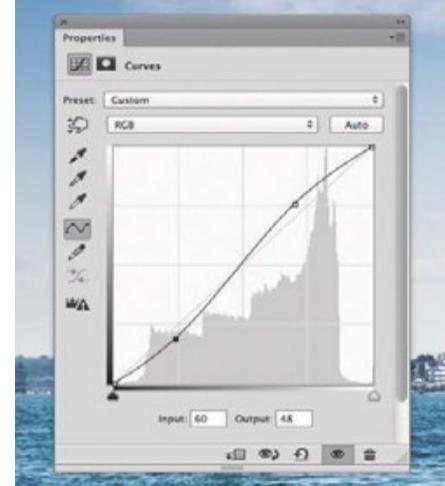
= COLOUR BALANCE

Opens up the panel for altering an image's colour balance in each of the cyan/red, magenta/green and yellow/blue channels.

CTRL + M

= CURVES

Opens up the Curves panel, a sophisticated tool for adjusting image tones to lighten, darken, add contrast and shift colours.



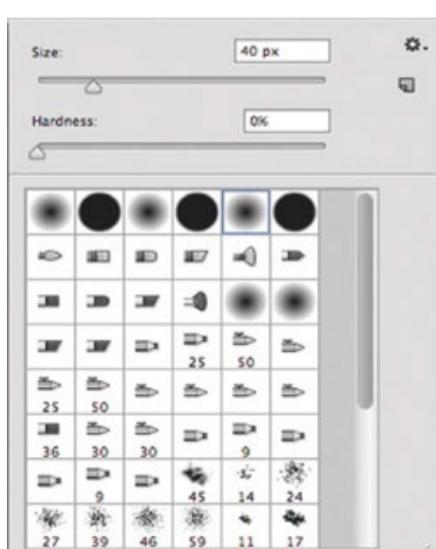
CTRL + U

= HUE/SATURATION

Allows you to alter the hue and saturation of an image's colours. Additional shortcut – use Ctrl + shift + U to quickly desaturate an image for a rough B&W conversion.

BRUSHES

Using a brush is something image editors will find themselves doing a lot, whether you're painting over a spot, reverting an edit with the history brush or brushing into a layer mask. These shortcuts will help speed up the process.



] OR [

= DECREASE OR INCREASE BRUSH SIZE

Use the square bracket keys to quickly increase or decrease the size of your brush tool in accordance with the size of the area you're working with.

SHIFT +] / SHIFT + [

= INCREASE OR DECREASE BRUSH SOFTNESS

These shortcuts will adjust the softness of your brush tool in 25% increments, useful for when you need a more delicate touch.

1 TO 9 (NUMBER ROW)

= ADJUST BRUSH OPACITY

A quick way to set your brush opacity. Each number key represents an increase of 10%, culminating with 100% at the 0 key. If you want to be more precise, quickly press two numbers in succession to get that exact opacity percentage – so while pressing 4 or 5 would get you 40% or 50% opacity respectively, quickly pressing them one after the other will set the opacity at 45%.

Photo editing with Graphics Tablets

It may seem intimidating, even bizarre at first, but drawing on a graphics tablet can be an incredibly efficient and intuitive way to edit your images. With a tablet you literally draw on your image with an electronic stylus, using it to control selection and brush tools in much the same way you would your mouse.

For those who already own an ordinary tablet, you can purchase styluses designed to work with them to allow them to operate

like a graphics tablet (though they're unlikely to have the same sensitivity as the real thing). Where graphics tablets excel is in pressure sensitivity – industry leader Wacom boasts that its higher-end tablet/pen combinations deliver 2,048 levels of pressure sensitivity, creating a great balance of control and intuitiveness.

Whether they'll be suitable for your type of photo editing or not is quite dependent on you as an editor. The thing to remember

about tablet editing, as we've touched upon several times, is that's it's very much about intuition rather than numbers. The level of opacity in, for example, your layer mask will depend not on the exact value you set it at, but how hard you press down with the stylus. For those who like the sound of editing by 'feel', a graphics tablet is certainly worth consideration, but those of a more scientific disposition may prefer to use the more conventional mouse.

RECOMMENDED GRAPHICS TABLETS

WACOM INTUOS PRO

£199-£429 (DEPENDING ON SIZE)

This is very much the granddaddy of graphics tablets; if you ask any expert in the field for a recommendation they will probably point you in this direction. Wacom Intuos Pro tablets are exceptionally well made and are generally pleasant to use.

If a graphics tablet sounds like your thing, the Intuos Pro is a superb choice. The side buttons are customisable, allowing you to map your favourite shortcuts where you want them. Most importantly it's very comfortable to use over long periods and the fact that it connects wirelessly is a nice bonus, too.



WACOM CINTIQ 13HD

£649

The Wacom Cintiq 13HD is an interactive pen tablet that blends the design of a traditional tablet with a Full HD 1920 x 1080 display. Like Wacom's Intuos Pro models, the highly sensitive pen offers 2,048 levels of pressure sensitivity and it comes with a detachable stand that's also height adjustable. If you'd like to edit directly on your images, Wacom's Cintiq 13HD offers a creative way to do so.



WACOM INTUOS PEN & TOUCH

£72-£149 (DEPENDING ON SIZE)

As its name suggests, Wacom's Intuos Pen & Touch gives you the option to work on your images using the supplied pen, or if you'd prefer, you can run your fingers over the tablet's surface to control the cursor by touch. Gestures, similar to those used on your smartphones and tablets apply, making it possible to pinch and zoom, scroll and rotate images very easily. Like all of Wacom's tablets, its ambidextrous design caters for those who like to work left or right handed. If you've never used a graphics tablet before and don't fancy spending hundreds of pounds, this is the one for you.



WACOM BAMBOO STYLUS FEEL

£35

More and more of us are turning to our tablets to edit our images. Rather than using our fingertips to control our mobile device, it's important to have the finest level of control and this is where a stylus pen comes in handy. With a smooth, sleek matte black finish, Wacom's Bamboo Stylus Feel features interchangeable pen tips and is compatible with most of today's touch-enabled tablets, including iPads and Samsung's Galaxy Tabs.



Tips when using Adobe Camera Raw



The fact of the matter is that if you're not shooting in Raw and using Raw software to process your images, you simply aren't using your editing time as effectively as you could be. Yes, processing Raw files can be a lengthy process, but the degree of creative control you gain with Raw files is, in the long run, more than worth it.

1 HOST USING BRIDGE

This is a useful trick to speed up your workflow – you can use Adobe Bridge to host the Camera Raw plug-in, thus saving on processing power by not having Bridge and Photoshop both open simultaneously. Right-click or Ctrl-click your image in Bridge and select 'Open in Camera Raw'.

2 SET CAMERA PROFILE

Before you plough ahead using the basic editing panel, it's worth applying the specific profile for whatever camera you shot your image with. This will allow the software's automatic processes to respond specifically to the quirks and idiosyncrasies

of your camera. Adobe maintains a fairly comprehensive list of camera profiles – if you're using a relatively recent model from any of the major manufacturers (and a few less major ones) you will almost certainly find it on the list (<https://helpx.adobe.com/photoshop/camera-raw.html>).

3 RECOVER DETAIL

One of the most useful functions of Camera Raw is its ability to recover details from areas of an image that may have seemed unsalvageable. Using the Highlights and Shadows sliders, you can pull detail back from overexposed or underexposed images and quickly turn a seemingly dud shot into something worthwhile. Don't forget to use the shortcut letters O and U to reveal where in the highlights and shadows the detail is lost.

4 CHECK FOR DISTORTION

Camera Raw features a lens correction panel that allows you to quickly check whether your image is suffering from any

lens distortion. From here you can then instruct the programme to correct the distortion automatically or you can do it yourself manually.

5 MAKE A PRESET

If you find yourself repeatedly making the same edits to your images, you can speed things up by making presets that you can apply to multiple shots. Use 'New Preset' in the Preset panel, and tick the settings you want to save.

6 BE BOLD AND CREATIVE

One great thing about Camera Raw is that its edits are completely non-destructive. This is because it does not record edits as actual alterations to the pixels of an image, but instead stores them as a separate 'sidecar' file that acts as a set of instructions for the next programme to open the image. This means you can get as creative as you like without fear of ruining your hard work out in the field by accidentally overwriting something.

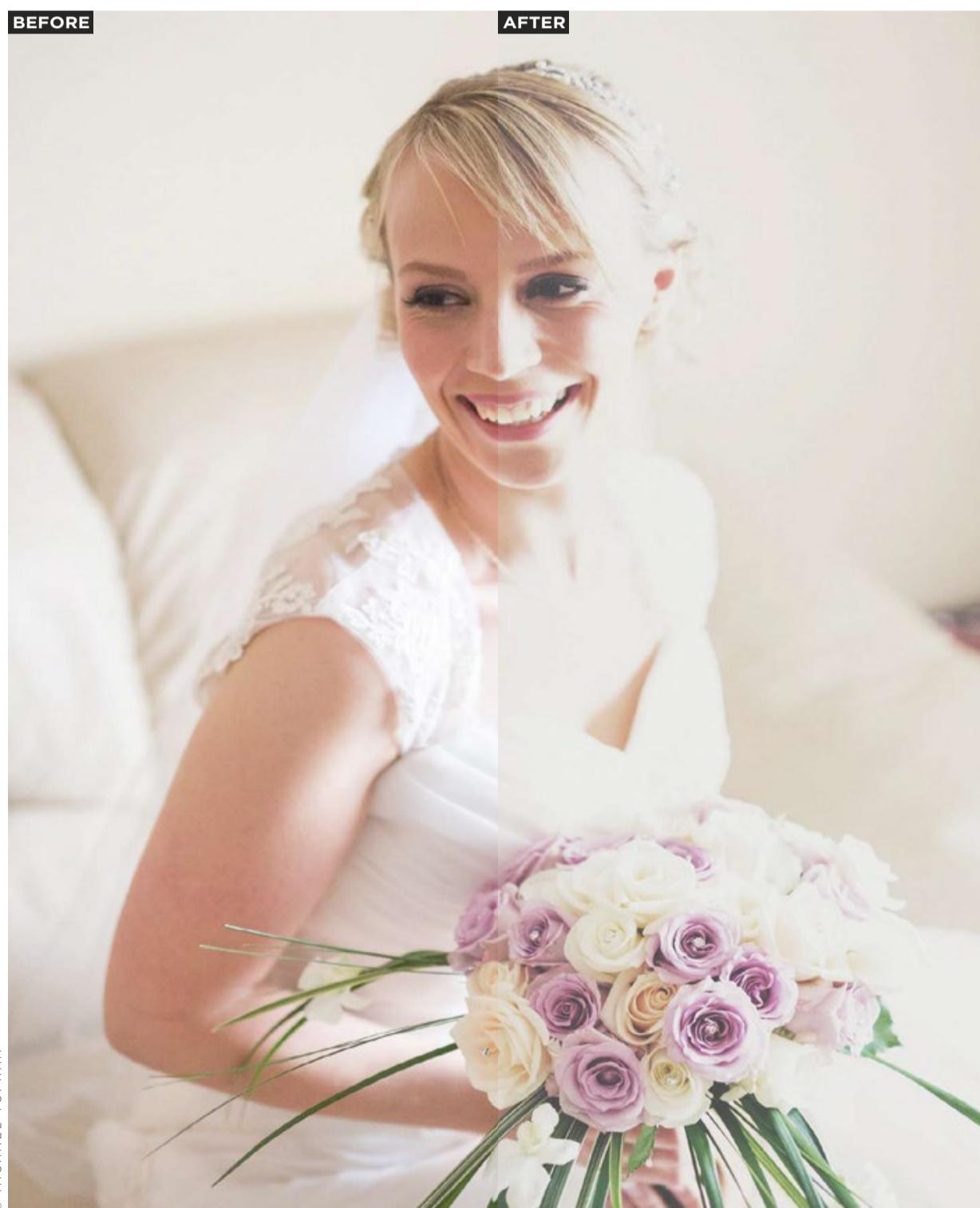
Film simulation software

Image editing isn't just about making things as clean and sharp as possible. As the phenomenal success of Instagram demonstrates, there is a huge appetite for digital images with that classic 'look' we associate with film. Most cameras released these days come pre-loaded with Instagram-style presets, however these can be a little risky to use, because if after taking the shot you decide that it actually might look better without a Velvia filter all over it, there's nothing you can do.

A safer course is to apply the effect in software after the fact, and indeed there are a few software packs designed with this purpose in mind. Here are some of our favourite ones.

DXO FILMPACK

Some will say that digital photography can never truly capture the feel of film, but DxO Filmpack represents a very convincing

**BEFORE****AFTER**

attempt. Available as a plug-in for Photoshop, Aperture and Lightroom or as a standalone package, DxO Filmpack specifically emulates a huge range of classic films, from Kodachrome 64 to Fuji Velvia 50. From these presets you can then adjust individual settings such as grain and determine the intensity with which the effect is applied, until you get exactly the image you want. It's available in Essential (£59) and Elite (£99) editions – the latter is more expensive but comes with a host of useful features such as Raw support. Current edition is Filmpack 5.

VSCO FILM

Another stack of presets available for Lightroom and Photoshop, VSCO uses modern camera profiles to achieve the best film 'look' for your images. One thing to note is that where numbered editions of DxO filmpacks replace the previous ones (so you only need to buy the latest edition), VSCO Filmpacks 1 to 6 are all different collection of films and cost £75 each. Therefore, if there's a specific look you know you're after, it's worth doing a little research to get the pack you want.

ALIEN SKIN EXPOSURE

Though it also offers the requisite film stocks and simulation modes, Alien Skin Exposure also adds a few extra features into the mix, most notably a dedicated Bokeh program that allows you to simulate shallow depth of field and toy camera effects. These come with specific lens presets for Canon, Nikon and Zeiss lenses. The current edition is Alien Skin Exposure 7, which costs around £95.

Mobile Editing



Editing images on the go has never been easier or more effective thanks to the wide proliferation of editing apps for mobile and tablet. Snap a shot with your phone or download one from your camera and you can have it quickly polished up for sharing on social media. There are a number of apps for doing so – here are some of the best ones going.

SNAPSEED

IOS/ANDROID

One of the premier editing apps, Snapseed works on a gesture-based interface that can be intimidating and bewildering at first, but once you've got the hang of it you'll find it to be an intuitive and efficient editing tool. Using simple motions you can straighten a photo, or apply effects such as tilt-shifts. There are filters too, but not simple paste-over filters – you can fine-tune the intensity with which they are applied and control individual attributes such as noise. It's incredibly powerful.

ADOBE LIGHTROOM MOBILE

IOS/ANDROID

Users of Adobe's popular Lightroom editing program have been calling out for a mobile version of the software for yonks and though it's still fairly new and in its infancy, it's worth a closer look. After linking Lightroom 5 and Lightroom Mobile to a Creative Cloud account, the two automatically join forces and sync any images that are grouped and enabled for sync under Lightroom's Collection tab. In order to prevent large files from clogging up an iPad too quickly, all images are automatically resized. It's intuitive and works well. For more, check out our full review at: www.whatdigitalcamera.com/lightroommobile



AFTERLIGHT

IOS

For those who want a simpler editing experience, Afterlight is a perfect choice. It's easy to use but pleasingly deep, with a huge range of filters, light leak simulations and other effects that can give your images a stylised look. There are also plenty of transformation tools such as crop and straighten. If you're a passionate Instagram user, this is a perfect way to get a similar experience but with more control on your tablet.

TOUCHRETOUCH

IOS/ANDROID

Essentially an app version of the clone-stamp tool, TouchRetouch is a quick and efficient way of getting bothersome details out of your images. Using the Brush and Lasso tools you'll recognise from Photoshop, you can get rid of dust and spots, flare and ghosts and even skin imperfections. It's worth a download and can be used alongside other mobile editing apps to ensure your final results are free of imperfections. It won't break the bank either at just 0.79p.



If you're a frequent tablet user, it's worth investing some time to find a mobile editing app that suits your style of imagery. One of our favourites is VSCO Cam, which is intuitive to use and pictured here on the iPad.

SPEED UP YOUR WORKFLOW

You may think that your shooting routine is as good as you're going to get it, but it's easy to slip into bad habits and lazy routines. You may even be risking the safety of your equipment. We've compiled some steps that will help you get the most out of your time in the field; if you want to avoid a nasty repair bill or just shoot more efficiently, take some time to read these and apply them to your photography.

Shooting

INCORPORATE YOUR PHONE

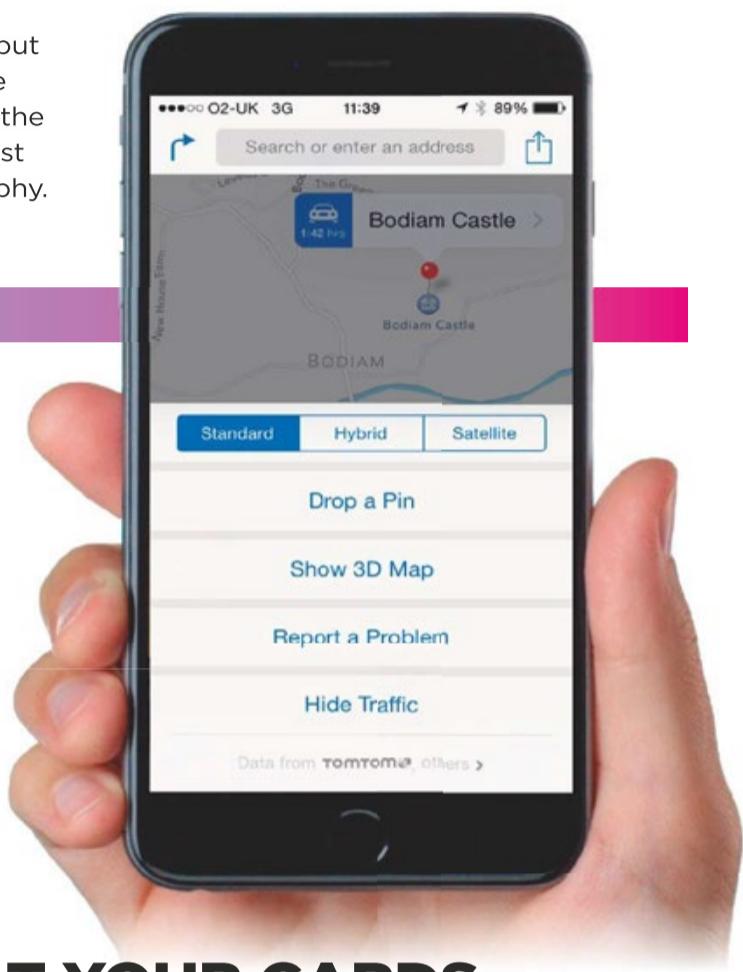
Even if you have no interest in taking pictures with your smartphone, it still has a wealth of uses for your photography workflow. Using Google Maps or Apple Maps is a great way to mark the precise co-ordinates of your favourite locations. Alternatively, connect it to your camera's

Wi-fi to instantly download photos as soon as you've taken them, and then give a few favourites a quick rough edit with one of the many editing apps available (see page 51). Your phone can be a lot more useful as part of your shoot than just sitting in your pocket.



RATE IMAGES

As a digital photographer you almost certainly take a lot more pictures than you need to. You probably know the pain of getting home and sifting through a raft of duds to find the good shots all too well. One way to speed up this process is use your camera's image rating function to mark out the hits and the misses as you go. It's usually found through the menu or even via a dedicated rating button, depending on the camera, and just remembering to hit this button after taking a shot will make your life much easier once you get to the computer.



FORMAT YOUR CARDS

Whenever you get home from a shoot, the first thing you do after you take your shoes off should be to head straight to the computer and download your images. You don't want to have images hanging around on your card any longer than you need to, otherwise you may find yourself arriving at another shoot and turning on your camera only to find its memory card filled with images that you can't batch-delete because they're the only current copies. You want to be able to format your card and start afresh at the beginning of every shoot.



Preparation

INVEST IN A DEDICATED CAMERA BAG

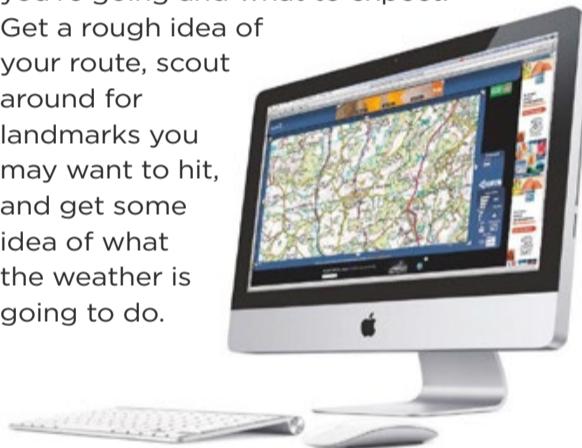
A well-designed camera bag makes efficient use of space and you'll have a much easier time out on shoots if you invest in a good one. Velcro dividers let you customise the space to suit your needs, and many have quick-access pockets that allow you to get to your gear as fast as possible, for those quick-to-react situations.



RESEARCH LOCATIONS

If you're heading out to a new location for a shoot, do yourself an enormous favour and give yourself a rough idea of where you're going and what to expect.

Get a rough idea of your route, scout around for landmarks you may want to hit, and get some idea of what the weather is going to do.



UPGRADE YOUR FLASH

Even if you shoot exclusively outdoors, there are many practical uses you can make of flash. You can use fill-flash to lighten up a shadowed foreground subject, use slow-sync flash to freeze motion, or give a little extra light to highlight features in an outdoor portrait. This is only true, however, if you upgrade from on-camera flash. Invest in a decent flashgun, and a stand, to use it off-camera. You may also want to consider a pop-up Ezybox to create a softer, more diffused effect.



DRESS APPROPRIATELY

On a similar point, keep an eye on what kind of temperatures you can expect and dress for them. Having to stop a shoot because you're too cold and wet to carry on is likely a mistake you'll only make once, but it would be better never to make it at all. Also, if you're heading far off the beaten track, having a sleeping bag stowed in the car isn't a bad idea. You'll hope you never need it, but if you do, you'll be glad you have it.



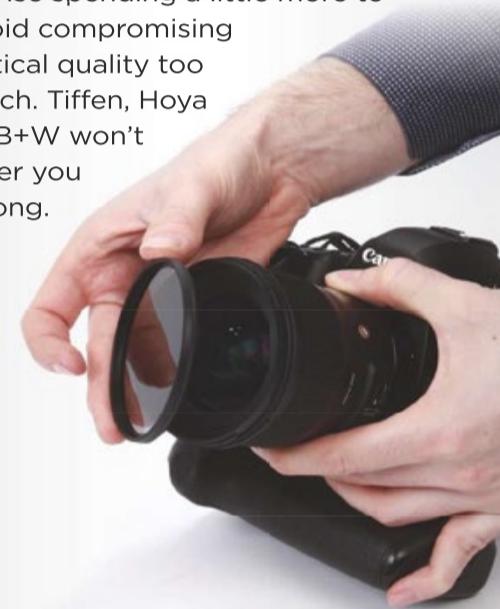
CLEAN YOUR SENSOR

Sensors inevitably accumulate dust, and you should be sure to set time aside regularly to keep yours clean. This, however, comes with a caveat – you should clean your sensor yourself only if you know how to do it, and you feel confident about it. It is a slightly more complicated process than sticking a cotton bud inside your camera and wagging it about, and it's an easy way to permanently damage a camera if you don't know what you're doing. If you have any doubts, any at all, send it to a professional cleaning service. If not, then pick up a compressed air vacuum and a sensor swab (available for full-frame and APS-C cameras) to lift dust and remove stubborn dirt.

Safety

PROTECT YOUR OPTICS

We're sure you're very careful with your expensive lenses, but accidents do happen. One way to be surer of protecting your expensive optics from damage is to affix a UV filter to the front. A UV filter is designed to block ultraviolet rays from passing to the sensor, but doubles as an inexpensive front line of protection from impact in the event that your lens takes an interesting but brief journey towards the pavement. While you can get them very cheaply, we'd advise spending a little more to avoid compromising optical quality too much. Tiffen, Hoya or B+W won't steer you wrong.



GET INSURED

Have you ever totted up how much your photography gear is worth? It's a fun exercise, and an excellent way to give yourself a minor coronary incident. If this is something you've never thought about before, then it's definitely worth looking into insuring your kit, should the very, very worst happen. If your gear were to all be stolen or damaged you'd absolutely kick yourself for not having insured it. We can recommend our sister magazine *Amateur Photographer's* insurance services. Find out more and get a quote at www.amateurphotographerinsurance.co.uk.

PROTECT IMAGES

Like the Rate feature, this is another function on your camera that you may not have been aware of. Usually found within the playback menu, the Protect function allows you to assign images with a 'Protected' status that safeguards them from accidental erasure – say if a fat-fingered moment has you accidentally hitting 'delete-all'.

Editing

Many digital photographers lament the amount of time they find themselves spending in front of their computers – the digital darkroom is, for the moment, a simple fact of life. However, there are ways you can make your editing time more efficient and carve yourself out some more time to spend actually taking pictures. Make your editing time count with our top tips.

USE FAST CONNECTIONS

If you're sick of watching the progress bar creep incrementally across your screen as hundreds of images travel from camera, to computer, to external hard drive, you should check that you're using the fastest connection you possibly can. If you own a newer computer then you'll likely have USB 3.0 connectivity, which enables significantly faster file transfer. If you own a Mac you may be able to make use of Thunderbolt connectivity, the fastest form of connectivity currently available.

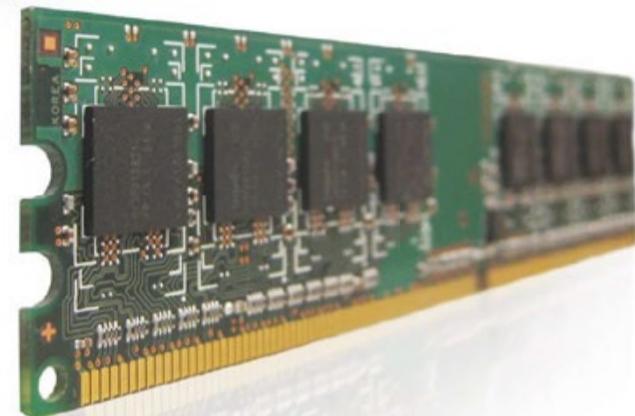


UPGRADE FROM A HARD DRIVE TO A SOLID STATE DRIVE

This is another way to get your computer running a little faster: upgrade its hard drive to a Solid State Drive. Unlike hard drives, Solid State Drives contain no moving parts. This means that they consume less power (and thus improve battery life if you're using a laptop) and are less susceptible to shock and vibration damage – the kind that can result in corruption and lost images. Upgrading to a Solid State Drive will also allow your computer to perform general tasks faster, and is well worth doing if you're finding your editing workflow to be increasingly sluggish.



GET MORE RAM



The amount of memory your computer has, dictates how fast it will run. If you find yourself constantly waiting for your computer to load programs or judder from one task to another, chances are this is why. Check your computer's specifications – are you running with less than 4GB of RAM? If so then it's definitely time to upgrade. Luckily this doesn't have to mean buying a new computer – a block of 4GB memory for a Mac can be picked up for just over £30. Make sure you check that the memory is compatible with your specific model of computer before clicking 'Buy'.

Manage your workstation

BACK UP. BACK UP. BACK UP.

Once again: back up. It feels as though this should go without saying, and yet so many people admit that they are lazy with backing up, or don't bother at all. This is an excellent way to permanently lose your images. Hard drives are not as resilient as you think they are, and you are overwhelmingly likely to experience hard drive failure at some point in your life. When it happens, you want your images to be backed up on an external drive, or in a

cloud-based service. We would actually recommend purchasing two external hard drives, to be extra cautious. One thing you definitely should not do is rely on social networks to store your images – having everything uploaded to Facebook may seem foolproof, but Facebook doesn't store images at full resolution.



DELETE OLD OR USELESS FILES

This is a decent stopgap alternative to upgrading your hard drive. Simply clean out your computer. Take an afternoon, round up all the applications you don't have any use for and files you no longer need, and get rid of them. You may be surprised by how much faster your computer performs immediately after a clearout. It's a good habit to get into regularly so make sure you do it!



Be Disciplined

1 KEEP A CLEAN WORKSTATION

The cleanliness of a workstation is the difference between being an organized and proficient image editor and one that gets caught up in their own mess. To make sure you preserve a clean and tidy workstation, keep a bin next to your desk for any scrap prints or rubbish and keep any memory cards, papers and hard drives neatly arranged. If you don't already own a desk tidy, buy one, and the same can be said for a coaster to rest your mug on. The last thing you want is for that brew you've just made to spill into your keyboard or, worse, your hard drive. Keep a clean workstation and you'll feel more inclined to sit down and start editing, we guarantee it.

4 CREATE A TIDY FOLDER SYSTEM

Every photographer archives their images differently, but however you do it you'll want it to be tidy so it's easy to find specific images when you want them. Get into bad habits such as dumping random images loose onto a hard drive and you'll end up spending unnecessary time trying to relocate them. If you're unsure of how to go about it, create a year folder and then twelve folders within this for each month of the year. Within these folders you can then add additional folders – naming them by date (usually the best option) followed by the subject or location. Doing this will not only give you a quick referral to when the images were taken, it'll allow you to search for images more easily by keyword later down the line.

2 BE STRICT WITH YOUR TIME

There are also plenty of ways to improve your editing workflow that don't have anything to do with your computer. For a start, look at the way you use your time, and the way you allot your time to editing and organising your images. Try setting a specific timeslot – an evening or a weekend perhaps – that you plan to spend organising your images. Defend that time, use it judiciously, and walk away to do something else once it has elapsed. This will help transform image editing into something you do, rather than something you intend to do any day now.

5 GET COMFORTABLE

If you're used to editing in front of your computer for hours on end, you'll want to be comfortable. Those with a laptop may prefer to retreat to the sofa to carry out their editing, but remember you could end up looking down at that screen for hours – running the risk of nasty neck ache at the end of it. Sit at a desk, place your laptop on a laptop stand and you'll feel so much better for doing so. Don't skimp when it comes to your chair either. A well padded and comfortable office-style chair that's height adjustable is a must. Remember to lean back too. Hunching over in front of your screen can be a cause of back pain and distress when you're editing.

3 GIVE YOURSELF BREAKS

It's easy to become burnt out with a task if you push yourself too hard at it for too long, especially when it involves staring at a computer screen. Factor in little breaks to your editing sessions to rest your eyes and breathe a little away from the computer. Get a cup of tea, take in some fresh air.

6 TURN OFF THE WI-FI

When you're dealing with your images, do you have Facebook open in another window? Do you find your attention drifting as you browse headlines while the image you have open in Photoshop waits patiently, untouched? If so, try unplugging from the internet for the time you have set aside for working with your images. You'll find it much easier to stay on task. Put your phone somewhere else too – the world can live without you for an hour. Give yourself some peace and space.



Output

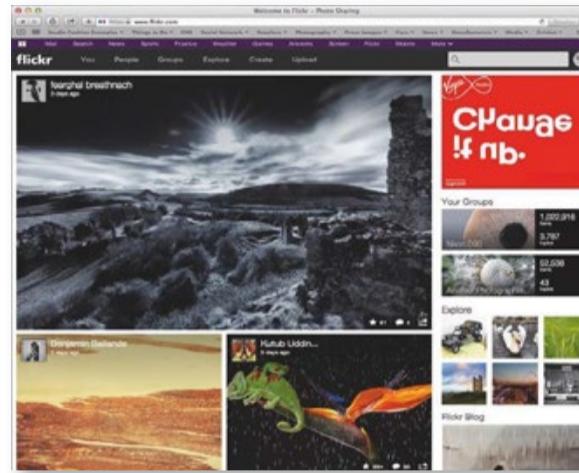
You may spend all your time shooting, editing and cataloguing your beautiful images, but there's not much point if nobody ever sees them but you. There are numerous ways of getting your images out there for people to see – from taking a few prints down to your local camera club to posting a selection online for a wider

audience to see. If you're not already posting some of your images to social media or websites such as Flickr it's worth considering. By getting your images out to the masses you're more likely to receive feedback and we all like complimentary things said about our images. Here at *WDC* we regularly check our Facebook,



FACEBOOK

Setting up a dedicated Facebook page for your photography is not only an excellent way to promote yourself a little, it's also a courteous thing to do for the rest of your Facebook friends (as painful as it may be to admit, it's likely that not every single person on your Facebook friends list is rapturous with excitement at the thought of seeing your latest interpretation of the morning mist in the Peak District). Set up a Facebook page, invite your friends to Like it (once!) and don't be afraid to post there regularly. Show people what you're up to, curate some albums and be creative.



FLICKR

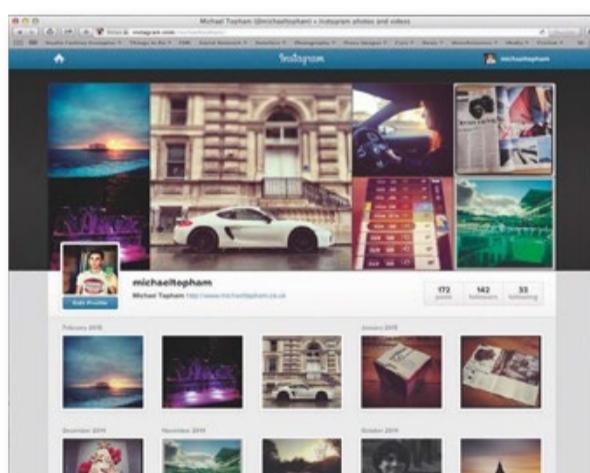
Flickr is probably the fastest way to find yourself in the midst of a sprawling community of like-minded photographers. You'll find constructive feedback, advice, technique, inspiration and just a whole lot of great images. If you're unsure of how to approach a new location, what time to visit, or the best angle to shoot from, turn to Flickr and you'll be better prepared well in advance. For those of a more arty temperament, you might want to try 500px.com – another popular photo-sharing site amongst photographers that's quick to sign up to and use.

Twitter and Flickr feeds for stunning images to feature in the magazine. Who knows, giving your images some extra exposure could spark a huge interest in your work or potentially lead to your pics being published in a future issue of the magazine. Here are a few different ways to get your work out there.



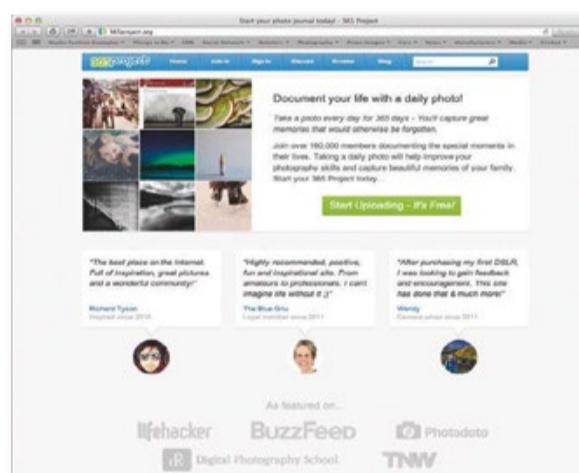
TWITTER

Though it's not really built around sharing pictures, Twitter is a great place to discuss photography and it thrives on a vibrant community of people doing just that. If there are some professional photographers out there who you admire, set up a Twitter account and search for them to see if they're using it. If they are, hit the follow button and you can keep in the loop with their activities, what they're shooting and the interesting places they're visiting. If you'd like to keep up to date with all the photography news and gossip don't forget to follow @WhatDigCamera



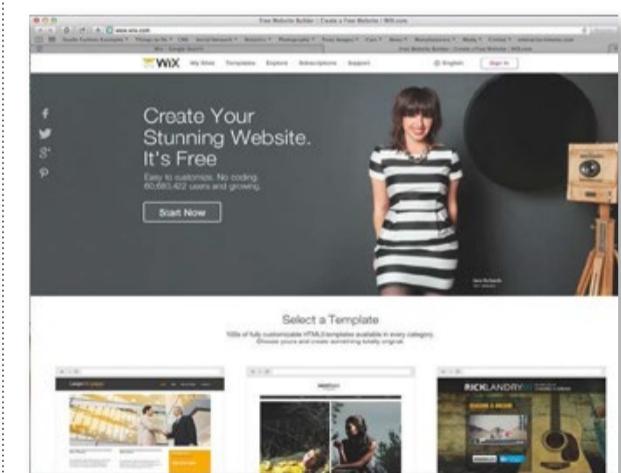
INSTAGRAM

While it used to have scorn and derision heaped on it in spades, these days you'll find few photographers who don't have an Instagram account. It is one of the most popular picture-sharing networks on the face of the planet, and since you have some interest in sharing pictures, you ought to at least be on it. Even if you hate the filters and the effects it produces, it could be your gateway to getting your work out there and noticed by someone.



ENTER PHOTO CHALLENGES

The 365 project and 52 project are online photo communities that challenge photographers to take and upload a shot every day or every week, respectively. If you're feeling guilty for not using your camera enough or taking as many photos as you think you should, challenges like these are great ways to ensure that you're always doing what you love. It's a great way of observing what's around you too.



CREATE YOUR OWN WEBSITE

It's really not as hard as it sounds. Online services that help you quickly set up a portfolio website are everywhere, offering a range of templates that can have you setting up a gallery of your work within minutes. If we may offer a piece of advice for building a website – keep it clean and simple. Extravagant moving slideshows and animated icons may look pretty, but they can make your site slow and clunky.

ULTRA HD

Blackmagicdesign



DAVINCI RESOLVE 11

DaVinci Resolve 11 now adds professional nonlinear editing to the world's most powerful color grading system!

DaVinci Resolve 11 combines the world's most advanced color corrector with professional multi track editing so now you can edit, color correct, finish and deliver all from one system! With its legendary image quality, real-time GPU accelerated performance, and support for more wide dynamic range RAW formats than any other system, DaVinci Resolve has the creative tools professional editors and colorists need to work on Hollywood's most demanding projects!



Integrated Editing and Grading

DaVinci Resolve 11 gives you professional editing and color correction all in one system so you can move between editing and grading with a click of the mouse! No more importing, exporting, or conforming ever again! Teams can have multiple colorists and assistants working with an editor on the same sequence at the same time! You get a true nonlinear workflow that lets you edit, grade and finish faster than ever before!



Professional Nonlinear Editing

DaVinci Resolve's multi track timeline lets you quickly ripple, roll, slip, slide, extend and shorten edits. The context sensitive trim tool changes automatically based on the position of the mouse to make editing faster! Dynamic JKL trimming works on multiple tracks and can be done in the same direction or asymmetrically. Whether you use the mouse or keyboard, Resolve is easy to learn and has all of the tools professional editors need!



Native Camera RAW

DaVinci Resolve works natively with all major RAW formats! Featuring the industry's most advanced de-bayer algorithms, Resolve preserves every detail captured by the camera's sensor. That means you can adjust exposure, shadows, highlights and mid-tones long after the camera stops rolling! With Resolve, you can create looks that simply aren't possible on other systems. The native RAW workflow means your final masters are literally first generation renders from camera original files!



Scalable Power

Hollywood's leading studios choose DaVinci Resolve because it handles incredibly high resolution images and massive amounts of data easily on super tight deadlines. Resolve is scalable and works on laptop's up to massive multi GPU systems connected to shared storage. Whether you're working on HD, 4K or beyond, DaVinci Resolve has the power, performance and creative tools you need to get the job done!

DAVINCI RESOLVE 11 LITE

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Supports 1 GPU.

Free Download

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Use 3rd party control panels.

£665*

www.blackmagicdesign.com/uk

*SRP is Exclusive of VAT

DAVINCI RESOLVE 11

Full Resolve with colorist control surface
for the most advanced facilities.

£19,975*

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COMPACT OR SYSTEM CAMERA?

If you've set aside a budget for a new camera, you'll want to know which type is going to make the best choice and why. Our complete guide runs through your best options

All digital cameras are based around the same theory; use a light-sensitive sensor to capture light, then process the result and save it onto a memory card. Beyond that the functionality can vary wildly from model to model, from touchscreen controls to HD video and wide-aperture lenses differentiating one from another.

Digital cameras fit into three distinct categories: Compact Camera, Compact System Camera (CSC) and Digital Single Lens Reflex (DSLR) Cameras. All three have sub-genres within them, but there are other obvious qualities which set them apart.

Compact cameras have a fixed lens, which can't be removed and changed. This means the lens becomes a feature in itself, with some starting at a particularly wide focal length, or reaching out much further than others (or both), and others having wide maximum apertures which prove their worth in low light and for

controlling depth of field.

Manual controls, the ability to record HD video and a large, high-resolution display or viewfinder are just a few of many other features that can be had when more money is spent.

Within the compact camera genre are the likes of bridge, or

'superzoom' models, which offer a far longer zoom and a body shape akin to that of a DSLR, together with manual control over shutter speed and aperture. While they can be used more creatively than regular compacts, their small sensors (relative to DSLR and

CSC cameras) place restrictions on the kind of image quality that can be achieved.

CSC'S

CSCs fit somewhere between compacts and DSLRs, with the benefit of a small-format body and interchangeable lenses.

BRIDGE

Looks like a DSLR but is actually a compact with a high-magnification zoom lens in a DSLR-shaped body – usually incorporating a large hand-grip and often a viewfinder.

PROS

Long zooms, All-in-one design, Manual controls

CONS

Generally small sensors are no match to DSLR quality, Build quality can be more plasticky than a DSLR



JARGON BUSTER

COMPACT SYSTEM CAMERA (CSC)

Cameras which offer interchangeable lenses while omitting the viewfinder and mirror box construction common to DSLR cameras. These include Sony's NEX series and Olympus's PEN range, as well as Nikon's 1 system and Samsung's NX line of models.

DIGITAL SINGLE LENS REFLEX (DSLR)

A digital SLR camera, which is constructed around a mirror-box and pentamirror/pentaprism assembly, such as the Canon EOS 700D and Nikon D5300. These are popular among beginners, enthusiasts and professionals,

thanks to their wide compatibility with different lenses, manual control over exposure and ergonomics.

COMPACT CAMERA

A small camera whose lens cannot be removed, in contrast to interchangeable-lens cameras such as DSLRs. These are often cheaper than CSC and DSLR cameras, although they usually have more limited functionality and smaller sensors.

APERTURE

The aperture of a lens refers to the size of its opening which allows light through to the camera. This is created by a series of blades

inside the optic, and is usually regulated through the camera body, although some older lenses have physical aperture rings around their barrels. An aperture of f/2 or f/2.8 is classed as being large (or wide) because the opening itself is larger than those created by higher-number apertures such as f/16 or f/22.

SHUTTER SPEED

The length of time that the shutter inside the camera is open, exposing the sensor to light. Longer shutter speeds let in more light, and so are often required in low-light conditions, or when the intention is to blur certain elements in the scene.

Faster shutter speeds are ideal for freezing motion, such as when photographing sports.

DISPLAY

The rear panel on the back of a camera which shows captured images and videos, as well as the live feed from the sensor. These are usually TFT LCD types, although some cameras now make use of Organic Light Emitting Diode (OLED) alternatives. Resolution is usually specified in dots: compact camera displays often have 230k or 460k dots, while those displays that are on high-end enthusiast compacts, CSCs and DSLRs are usually 921k dots or higher.

Due to their mirrorless designs, optical viewfinders are exchanged for electronic variants that continue to get better all the time in terms of their resolution and sharpness.

Due to the lack of an established form factor, unlike DSLRs, CSCs come in a wide variety of shapes and sizes. The majority of differences are purely aesthetic, but a fair few affect the handling quite significantly too. Some models have thin, wide bodies, whereas others are shaped like DSLRs to provide more to wrap your hand around.

DSLR'S

DSLRs range from absolute beginner models, such as the Canon EOS 1100D, up to professional level models, such as the same company's EOS-1D X. The body shape is similar throughout, with a large hand grip and dials on the top, although most professional

DSLRs are shaped to be more square than rectangular, with additional shutter release buttons and dials to make portrait-orientation shooting comfortable.

The addition of an optical viewfinder is one of the unique features that differentiates a DSLR model from most CSCs and compact cameras.

The only models that buck this trend, and as a result can't quite be described as true DSLRs, are those in the Sony SLT range, whose models



CSC

An interchangeable-lens camera with no optical viewing assembly but either an electronic one, or just the LCD screen to shoot with. CSCs come in a wide variety of forms with a wide range of sensor sizes, so image quality varies greatly between models.

PROS

Typically smaller than DSLRs, HD video, Interchangeable lenses, Hotshoes for accessories, Great image quality for the size

CONS

Optical viewfinders usually not available, Lens ranges continuing to evolve, Premium models can be expensive

DSLR

The choice of professionals, a DSLR features interchangeable lenses, plus an optical viewfinder that sees what the lens sees thanks to a 45° mirror and prism assembly inside the camera. The bulkiest camera type, but the full frame models deliver the highest image quality.

PROS

Interchangeable lenses, Manual exposure control, HD video, Excellent ergonomics

CONS

Large and weighty bodies, Expensive, Poor-quality kit lenses often supplied as standard

include the A58 and A77. The SLT construction uses a translucent mirror which means it does not need to move in order for light to pass through to the sensor, in contrast to DSLRs which flip their mirrors up at the point of exposure. As a result the burst rate is faster; with the likes of the A77 able to shoot at up to 12fps. The disadvantage, depending on your preference, is the presence of an electronic, rather than optical, viewfinder.

There are essentially two

different kinds of sensor used in DSLRs: APS-C and full frame, although full frame sensors are starting to creep into some CSCs such as the Sony Alpha 7 and 7R.

Full frame is described as such because it's roughly the same size as a 35mm negative. APS-C sensors are smaller, and as a result they only use the central part of a lens, which in turn increases their effective focal length (reducing the angle of view). This is known as a 'crop factor'. Full frame lenses

do not apply a crop factor to lenses, and so they maintain the same angle of view and focal length as if they were used on a film SLR.

DSLRs and CSCs also attract the attention of videographers, given the proliferation of HD video functionality and the range of lenses available. Many DSLRs – particularly those aimed towards a more discerning audience – also now incorporate ports for external microphones and have a full complement of options for

ISO

Also known as 'sensitivity', the ISO range of a camera determines its latitude for capturing images in different conditions. For a given camera, images captured at lower sensitivities generally contain less noise than those captured higher up, as the signal from the sensor – which contains unwanted noise – requires less amplification.

OPTICAL VIEWFINDER

A viewfinder which relies on an optical, rather than electronic, construction. DSLRs are equipped with optical viewfinders, which present the view through the lens. Those on cheaper

DSLRs are constructed with a hollow chamber with mirrored sides (penta-mirrors) while those on pricier models feature a ground glass prism (pentaprism) which is brighter.

ELECTRONIC VIEWFINDER (EVF)

An electronic alternative to an optical viewfinder. These are typically integrated into bridge cameras and some Compact System Cameras, where an optical viewfinder is either not possible or less desirable. More recent EVFs are constructed from OLED panels rather than LCDs, and some of these are surprisingly detailed and bright.

SENSOR SIZE

The physical size of the sensor inside a camera. Cameras with larger sensors often produce better-quality images than those with smaller ones, as each photosite is larger. A larger capacity allows its signal-to-noise ratio to be higher; as a result images stand a better chance of having a wider dynamic range and of being less affected by noise.

BURST RATE

The speed at which a camera can fire consecutive frames, given in frames per second (fps). Many recent cameras have a standard fps rate which captures at the sensor's full resolution,

with further faster options which output images at a reduced pixel count. Often a camera's fastest burst mode will only be possible with focus and exposure taken from the first frame.

NEUTRAL DENSITY (ND) FILTER

ND filters are commonly used with DSLR cameras, although some enthusiast compacts now have these integrated into their lenses. Their purpose is to reduce exposure times, so that longer shutter speeds can be used, with the 'neutral' part of their name signifying that they are designed to have no effect on the colour balance of an image.

CANON EOS 1200D £450



The Canon EOS 1200D features a new 18MP APS-C CMOS sensor – a significant increase in resolution over the 12.2MP chip found in its predecessor, the 1100D. This is paired with a Canon DIGIC 4 image processor to facilitate a burst speed of 3fps, up to a maximum 69 consecutive JPEGs or six Raw images.

On the back the 1200D is equipped with a fixed 3in, 460k-dot TFT LCD. The 1200D is bundled with a 18-55mm f/3.5-5.6 kit lens that features a newly developed image stabilisation (IS) system. Video recording has also been improved with the 1200D capable of shooting 1080p Full HD at 30, 25 or 24fps. Battery life has fallen to around 500 shots per charge though – 200 shots fewer than the 1100D. In terms

of build quality, the 1200D does initially feel a bit plasticky, however it's still a big improvement over the 1100D. It's a comfortable camera to hold with functions such as AF Mode and ISO accessed directly through the camera's d-pad. The dedicated Quick Menu button next to the d-pad is also useful as it allows for one-touch access to a host of commonly used functions. The 1200D features a nine-point AF module, which is speedy enough when the camera is used through the viewfinder. Unfortunately the AF feels noticeably sluggish when used in Live View mode though. With a 63-area iFCL colour-sensitive metering system (the same module that's found inside the much more expensive EOS 7D), the 1200D delivers accurate exposures, with the camera striking a good balance between shadow and highlight detail. The Automatic White Balance (AWB) setting delivers accurate colour, and there's little sign of either luminescent or colour noise between ISO 100 and 1600. Images at ISO 6400 remain printable at A4 size, but ISO 12,800 is best reserved for extreme situations.

NIKON 1 J4 £499



The Nikon 1 J4 follows on the J3, arriving with an 18.4MP 1in CX-format sensor and a really impressive performance with regard to speed. Capable of shooting up to 20 frames per second at full resolution, this jumps up to 60fps if you're happy to shoot in fixed AF thanks to the camera's electronic shutter. Other improvements include a substantial raise in the ISO sensitivity range to 160-12,800, while there's also the added benefit of a jump in battery life to some 300 images on a single charge. The rear of the camera houses an impressive 3in, 1,037k-dot LCD touchscreen and there's Wi-fi too for hassle-free transfer of images to mobile devices.

Particularly welcome is the access to AF point selection through the touchscreen, with swipe and pinch-to-

zoom functionality also being a bonus. The body is noticeably more refined than the J3 and its design will certainly appeal to the style-conscious. Something that might present an issue is the lack of any type of handgrip to get a solid grasp of the camera when your hands are wet or cold.

The shooting modes include Auto, Best Moment Capture, and Creative, so it's perhaps no surprise then that the J4 caters more for the beginner photographer than advanced shooters, and as a result, it's often easiest to use the auto setting if you're shooting in situations that demand quick adjustment of camera settings.

Despite the metering system being reliable, the disappointment is the J4's dynamic range, which doesn't retain a great level of detail in shadow or highlight areas. Resolution and detail captured is in line with what's to be expected from a camera of its type and the performance at the lower end of the ISO scale is respectable. Above ISO 800 however, images suffer from a loss of detail and aggressive noise reduction applied by the camera, meaning these settings are best avoided.

KEY SPECS

SENSOR: 18MP APS-C CMOS
FILE FORMATS: JPEG, Raw, Raw+JPEG
DISPLAY: Fixed 3in, 460k dots
ISO RANGE: 100-6400 (exp to 12,800)
EXPOSURE MODES: PASM, Auto, Scene
DRIVE MODE: Single, Continuous, Self-timer
MOVIE MODE: 1920 x 1080p Full HD at 30/25/24fps
DIMENSIONS: 129.6 x 99.7 x 77.9mm
WEIGHT: 480g

VERDICT

Compared to some rivals, namely the Nikon D3300 and Pentax K-50, the 1200D's specification is underwhelming. However, the AF speed and high ISO performance are excellent. While a higher burst speed and more AF points would be nice, the 1200D is more than capable for beginner DSLR photographers.

BEST FOR

- Novices looking for their first DSLR
- Anyone seeking better image quality than a compact
- Those working to a strict budget but wanting a DSLR

PROS

- Lightweight design
- Great value for money
- Performance at higher ISO setting
- EOS companion app

CONS

- Lacking Wi-fi as standard
- Could benefit from more AF points
- Low burst speed

FEATURES

17/20

PERFORMANCE

17/20

DESIGN

18/20

IMAGE QUALITY

18/20

VALUE

19/20



KEY SPECS

SENSOR: 18.4MP CX-format CMOS
FILE FORMATS: JPEG, Raw, Raw+JPEG
DISPLAY: 3in, 1,037k dots
ISO RANGE: 160-12,800
EXPOSURE MODES: PASM, Auto, Scene
DRIVE MODE: Single, Continuous, Self-Timer
MOVIE MODE: 1920 x 1080p Full HD at 60/30p
DIMENSIONS: 99.6 x 60 x 28.5mm
WEIGHT: 232g inc battery and card

VERDICT

Despite the impressive headline features found on the J4, the issues with the camera's operation are a pain, while the kit lens is less than impressive and the model really struggles at the higher ISO settings. That said, in terms of the burst speed and AF performance, it's hard to find a CSC which comes close to the speed it offers.

BEST FOR

- Those who'd like to shoot at breathtaking speeds (20fps with continuous AF enabled, or up to 60fps in fixed AF)
- Wi-fi users with mobile devices such as smartphones and tablets

PROS

- Lightning-fast continuous shooting
- Excellent touchscreen
- New chassis design is welcome

CONS

- Issues with shutter noise and readout
- Poor kit lens
- High ISO performance

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

17/20

IMAGE QUALITY

17/20

VALUE

18/20



PENTAX K-S1 £499



When you get past the eye-catching design and flashing lights of the K-S1 you'll notice that the camera is actually packing some serious imaging tools. Foremost of these is its 20.12MP CMOS APS-C sized sensor, which lacks any form of anti-alias filter. Thankfully, the manufacturer's AA filter simulator (as first seen in the K-3) is used to control moiré patterning and is particularly effective. Covering an ISO range of 100-51,200, the sensor also delivers full HD video capture at 1920 x 1080p resolution at either 30, 25 or 24fps. In terms of speed, the K-S1 is capable of shooting at up to 5.4fps for action shooting, whilst at the rear sits a 3in, 921k-dot LCD screen which is fixed rather than being of the vari-angle variety. The pentaprism viewfinder offers a 100% field of view and the

handgrip houses a range of illuminated lights that characterises the model – and they serve several purposes too. As well as offering a visual clue to the countdown timer, it reveals when face detection is in use. The controls on the camera are a little fiddly to use owing to their slightly awkward design, while the main directional control which operates the bulk of the camera's functionality is also a touch disappointing. Although the 11 AF points on offer are less numerous than some competing DSLRs from either Canon or Nikon, the K-S1 offers AF speeds that are certainly in keeping with models from those manufacturers at the same price level. Thanks to the APS-C sensor, Raw files deliver an impressive amount of detail, but due to the fairly aggressive noise and artefact reduction JPEG files don't quite meet the same high standard. Highlight detail is well preserved, and although images seem a touch underexposed a simple adjustment of the exposure compensation tends to this. Noise is hard to spot between ISO 100 and 1600, but it does begin to hamper fine detail when the sensitivity is raised above ISO 3200 to ISO 6400.

OLYMPUS E-PL7 £499



Olympus's 'PEN' series of CSCs is one of the most established in the market, with a strong history of high quality, which impress with both style and specification. At the core of the E-PL7 sits the same 16MP Four Thirds sensor as utilised in several other Olympus CSCs. Accompanied by a TruePic VII processor, it's no slouch with a solid continuous shooting speed of up to 8fps and an ISO range of 200-25,600 that can be expanded down to as low as ISO 100.

What marks the screen out is its vari-angle functionality, which allows it to be rotated to a front-facing angle 180° below the camera's lens. As well as the obligatory automatic shooting modes and full suite of manual exposure controls, there's the presence of some 25 scene modes as well as 14 art filters. With an accessory port

ready to accept an optional external viewfinder, Wi-fi connectivity, and a hotshoe to attach a flashgun, the E-PL7 has a strong set of features.

The body is a pleasing mix of a brushed metal finish with highlights of a leather effect material, giving it a comfortable feel in the hand. It's clear Olympus has attempted to create a screen perfectly suited to selfie capture, but you do get the feeling it's over-engineered somewhat.

In terms of focusing the 81-point AF system performs well, with an AF assist beam aiding correct focus in low light. Another slight disappointment is the fact that it only features one control dial and you can't utilise the touchscreen to navigate the various options in the camera. Out in the field, it generally meets its claim of 350 shots on a single charge of the battery.

Respectable levels of detail are recorded at low ISO and likewise, the dynamic range delivers some seriously good results. Noise remains well controlled up to ISO 3200 and the way the camera's spot metering is linked to the AF is a welcome addition. On the whole, it delivers faithful exposures in a wide range of shooting conditions.

KEY SPECS

SENSOR:

20.12MP CMOS (APS-C)

FILE FORMATS:

JPEG, Raw, Raw+JPEG

DISPLAY:

3in, 921k-dot

ISO RANGE:

100-51,200

EXPOSURE MODES:

PASM, Auto, Effect

DRIVE MODE:

5.4fps

MOVIE MODE:

1920 x 1080p Full HD at 30/25/24fps

DIMENSIONS:

120 x 92.5 x 69.5mm

WEIGHT:

558g (including battery and memory card)

VERDICT

Although it's hard to escape the unconventional looks of the K-S1, it's a model that impresses on the whole. The AF speed is up there with the best in class, while the viewfinder is better than a lot of equivalent models. There are a few handling issues and a poorly designed control dial, but most importantly, the images it produces are rich in detail and impress at high ISO.

BEST FOR

- Those after a quirky-looking take on a DSLR
- A camera that's available in many different colour combinations

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

17/20

IMAGE QUALITY

18/20

VALUE

18/20

PROS

- AF performance
- Anti alias filter simulator
- Excellent viewfinder

CONS

- Central control dial is too stiff
- Design not to everyone's taste

VERDICT

The E-PL7 takes a lot of the functionality from the enthusiast OM-D range and packages it up for the more consumer end of the market. The design is solid and the specification is also reasonable enough for those it's out to attract. Some sacrifices have been made with regards to the handling, but importantly it's the image quality that places it well in the CSC market.

BEST FOR

- Those who regularly shoot selfies
- Photographers after a classy-looking CSC with a robust build quality
- Users after a CSC that'll fit a jacket pocket

FEATURES

18/20

PERFORMANCE

17/20

DESIGN

17/20

IMAGE QUALITY

18/20

VALUE

18/20

PROS

- Solid metal build
- Responsive touchscreen
- Results from 16MP sensor

CONS

- Small size means sacrifices have been made with usability
- Tilting LCD screen design is poor



NIKON D3300 £600



The Nikon D3300 retains the class-leading 24.2MP APS-C CMOS sensor of its predecessor, however the anti-aliasing filter has been removed to improve sharpness. The new EXPEED 4 image processor inside the D3300 increases maximum ISO to 25,600 and also boosts continuous shooting from 4fps to 5fps. On the back, meanwhile, the D3300 retains the fixed 3in, 920k-dot LCD found on its predecessor.

It also features the same 420-pixel RGB sensor and 11-point AF system that served the D3200 so well. The D3300 retains the Guide Mode of its predecessors, complete with the eye-catching graphical rear display. This gives beginners a visual reference point to the settings they're changing.

The aperture graphic, for example, gets larger and smaller relative to the selected setting. There's also a '?' button which can be used to activate a more in-depth explanation of the settings being used. The body is constructed from a polycarbonate shell just like the D3200, although the body is 25g lighter. The redesigned 18-55mm kit lens, meanwhile, now has a collapsible design to make it some 30% smaller and 25% lighter. The optical viewfinder has also been improved, and now delivers 0.85x magnification compared to 0.78x on the D3200. Autofocus performance is decent, with the 11 AF points well spread out across the frame. With regards to image quality, the 'Standard' colour setting delivers a pleasingly natural palette, while the 'Vivid' preset mode adds extra oomph. Thanks to the class-leading resolution and removal of the low-pass filter, the D3300 resolved 34 lines per mm (lpmm) on our test chart, reducing to 28 lpmm at ISO 6400 – very impressive indeed. Although there are signs of colour noise at ISO 800, it's not until ISO 12,800 that luminance noise becomes a real issue.

SONY A6000 £670



The Alpha 6000 replaces the NEX-6, with Sony having decided to rebrand all of its NEX cameras, migrating them over to its Alpha range. The A6000 is equipped with a 24.3MP Exmor CMOS sensor, Sony's latest Bionz X image processor and a lightning-fast AF system – all of which are class-leading. The proprietary Bionz X processor enables the A6000 to shoot at 11fps for up to 49 consecutive frames when shooting JPEG, or 21 frames when shooting Raw and JPEG.

It also helps to facilitate lightning-fast autofocus, with Sony claiming a minimum focus acquisition time of just 0.06 seconds. The Hybrid AF is not only quick but also accurate thanks to the 25 contrast-detect and 179 phase-detect points that cover the frame. While the A6000 operates like a DSLR it looks and feels more like a CSC, much like its predecessor, the

NEX-6, did. With a lens attached the A6000 feels nicely balanced and comfortable in the hand. The handgrip features an ergonomic, rubberised finish that allows for easy one-handed operation too. While the NEX-6 featured a 0.5in, 2.3m-dot electronic viewfinder, the A6000 comes with a 0.39in, 1.44m-dot unit. While that does feel like a bit of a step backwards, the 100% field-of-view and increased vibrancy and clarity are both improvements. On the back there's a 3in, 921k-dot LCD display – hardly class-leading, but still capable enough. In terms of connectivity, the A6000 boasts both Wi-fi and NFC, allowing for wireless image transfer and remote shooting. The Sony A6000 uses a 1,200-zone evaluative multi-segment metering system that, on the whole, excels when it comes to delivering accurate exposures. The Auto White Balance setting is consistent, even in mixed lighting. Image noise is well controlled up to ISO 6400, although beyond this, noise does begin to take over. Thankfully, this can be alleviated with the camera's multi-frame noise-reduction technology.

KEY SPECS

SENSOR:	24.2MP APS-C CMOS
FILE FORMATS:	JPEG, Raw, Raw+JPEG
DISPLAY:	Fixed 3in, 921k dots
ISO RANGE:	100-12,800 (exp. to 25,600)
EXPOSURE MODES:	PASM, Auto, Scene, Guide
DRIVE MODE:	Single, Continuous, Self-Timer, Remote, Quiet
MOVIE MODE:	1920 x 1080p Full HD at 60/50/30/25/24fps
DIMENSIONS:	124 x 98 x 75.5mm
WEIGHT:	460g inc battery and card

VERDICT

The Nikon D3300 is an excellent demonstration of what entry-level DSLRs can offer. It does lack inbuilt Wi-fi connectivity, though this is probably understandable owing to the impressively low price-tag. If you're after an entry-level DSLR with a high resolution, the D3300 should be near the top of your wish list.

BEST FOR

- Novices looking to step up to DSLRs • If you want to learn advanced DSLR features as you shoot • HD video with the option to attach an external mic

PROS

- Low price-tag • Impressive burst mode • Reduction in size of kit lens
- High-resolution sensor

CONS

- Lack of built-in Wi-fi might disappoint some users • Issues with noise apparent at lower ISOs

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

18/20

IMAGE QUALITY

17/20

VALUE

19/20

VERDICT

The Sony Alpha 6000 comes with an impressive specification, and its performance doesn't disappoint. The blisteringly quick AF performance and a superb burst mode are especially worthy of praise. It's hard to pick out any substantial flaw on the Alpha 6000, and it's safe to say that it is one of the most impressive CSCs around.

BEST FOR

- Those shooting fast-moving action subjects • People who want the performance of a DSLR in the body of a CSC • NEX users who are looking to upgrade

PROS

- Good high ISO performance
- Great specification
- AF speed acquisition

CONS

- LCD screen could be a little more high-end
- EVF a touch behind competition

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

18/20

IMAGE QUALITY

18/20

VALUE

18/20

CANON EOS 700D £750



Based around an APS-C CMOS sensor the 700D retains the same 18MP pixel count that's offered by recent EOS models – an interesting decision given that some other manufacturers have opted for 24MP sensors in their mid-range models.

The 700D employs a nine-point AF system that uses the same diamond formation found in the 650D. All nine points are of the superior cross-type variety. The 700D's optical viewfinder offers 95% coverage. This is complemented by a vari-angle 3in, 1,040k-dot LCD display on the back that also offers touchscreen control. In terms of build quality the 700D benefits from a stainless steel chassis encased in a polycarbonate resin shell. It does feel a little plasticky, but is

comfortable to hold and offers a secure grip too. With the 18-55mm STM lens attached, autofocus performance on stationary subjects is both fast and silent. Using the 700D in live view, the combination of the Hybrid AF system and STM lens results in impressively quick autofocus and pleasingly smooth transitions. Focus tracking is possible during live view as well, and provided that your subject doesn't move too erratically, the camera does a good job of maintaining focus. While the maximum 5fps burst mode is useful it can only shoot six consecutive Raw files before the buffer fills. Things are a little better when shooting JPEG images, with a maximum 22 consecutive frames possible. Auto white balance is generally consistent, delivering pleasingly natural-looking shots. Shooting under artificial light can occasionally result in cool-looking images though. The 63-zone metering system generally delivers accurate exposures, although it can be a touch inconsistent in tricky light. Low ISO settings are devoid of image noise, with texture beginning to become noticeable above ISO 800.

Nikon D5300 £830



In addition to introducing Wi-fi connectivity, Nikon has made a number of significant improvements to the Nikon D5300 over its predecessor, the D5200. While the newer model sticks with the same 24.2MP APS-C CMOS sensor, sharpness has been given a boost thanks to the removal of the optical low-pass filter.

Continuous shooting maxes out at 5fps and the D5300 retains the same 39-point AF system of the D5200, which includes nine cross-type sensors. Autofocus performance impresses on the whole, although the bundled 18-55mm kit lens is a little on the noisy side for video capture. The D5300 comes equipped with a large 3.2in, 1,037k-dot LCD screen, which is

of the vari-angle variety for maximum flexibility. Sadly, there's no touchscreen functionality though. Build quality sits somewhere between the cheaper D3200 and more expensive D7100. One of the consequences of the larger screen are smaller buttons below the d-pad for zooming in playback mode. Unlike models from higher in the Nikon DSLR range the D5300 lacks a secondary command dial to adjust aperture independently of shutter speed when using the camera in manual mode. In terms of image quality the D5300 delivers rich, punchy and vibrant colour straight out of the camera. Resolving 28 lines per mm (lpmm) on our test chart, the D5300's sensor also delivers impressive levels of detail, allowing you to crop aggressively without a disastrous effect on image quality. Although a faint trace of luminance noise is introduced at ISO 800, this can be removed using noise reduction techniques. Colour noise doesn't appear until ISO 6400 though. Higher sensitivity settings such as ISO 3200 and 6400 are usable on a day-to-day basis. ISO 12,800 and 25,600 are best avoided if possible.

KEY SPECS

SENSOR:	18MP APS-C CMOS
FILE FORMATS:	Raw, JPEG, Raw+JPEG
DISPLAY:	Fixed 3in, 1040k dots
ISO RANGE:	100-12,800 (exp to 25,600)
EXPOSURE MODES:	PASM, Intelligent Auto, Scene
DRIVE MODE:	Single, Continuous, Self-timer
MOVIE MODE:	1920 x 1080p Full HD at 30/25/24fps
DIMENSIONS:	133.1 x 99.8 x 78.8mm
WEIGHT:	580g with battery and card

PROS

- Responsive and well-implemented touchscreen
- Light body • Fast AF • Noise control • Video quality

CONS

- Can feel a little plasticky
- Limited number of AF points • Buffer performance

VERDICT

The EOS 700D is essentially identical to its predecessor – the 650D. As such, it's difficult to recommend it as an upgrade model for anyone with a recent EOS DSLR. Those with a model older than the 500D are likely to be more satisfied with the improvements on offer here. Those looking for their first DSLR should consider it too.

BEST FOR

- Those seeking their first DSLR • A good balance of features, size, price and performance
- Low-light shooting up to ISO 6400

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

18/20

IMAGE QUALITY

18/20

VALUE

18/20



KEY SPECS

SENSOR:	24.2MP APS-C CMOS
FILE FORMATS:	JPEG, Raw (NEF), Raw+JPEG
DISPLAY:	Vari-angle 3.2in, 1,037k dots
ISO RANGE:	100-12,800 (exp. to ISO 25,600)
EXPOSURE MODES:	PSAM, Auto, Scene
DRIVE MODE:	Single, Continuous, Self-timer
MOVIE MODE:	1920 x 1080p Full HD at 60/50/30/25/24fps
DIMENSIONS:	125 x 98 x 76mm
WEIGHT:	480g

PROS

- Superb image detail
- Excellent build • Fast AF acquisition • Wi-fi • User interface • Inbuilt mic port

CONS

- Lacks touchscreen functionality • Poor app performance • Noisy kit lens • No headphone port

VERDICT

While it may be a very subtle upgrade from the D5200, the added refinement makes the D5300 a much more rounded proposition, though we still feel that a touchscreen is missing. If a touchscreen isn't one of your main concerns, it remains an excellent DSLR and it's hard to pick faults in terms of image quality or its build and finish.

BEST FOR

- Those looking for a well-specified and easy to use entry-level DSLR • Those wanting to share images on the move • Superb images

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

18/20

IMAGE QUALITY

19/20

VALUE

17/20



PENTAX K-5 II £870



Pentax has given its four-year-old K-5 model a modest makeover to create the second-generation K-5 II.

Interestingly, the newer model retains the same 16.28MP sensor of its predecessor, with the main update being its new SAFOX X autofocus module. Pentax claims that this offers 'the broadest autofocusing EV range in its class'.

This new system offers 11 AF points as before, with nine of these being of the cross-type variety. Another change is the newer model's 3in, 921k-dot LCD display, which now uses a gapless design between the display and the tempered outer panel. Pentax claims that helps to reduce internal reflections, with the anti-glare film on the outer panel also helping to

improve visibility. The optical viewfinder, meanwhile, offers 100% coverage – impressive for a mid-range DSLR. Whether the Pentax K-5 II is an attractive DSLR or not is subjective, but one thing that's difficult to dispute is its utilitarian design. The grip is substantial and rubbered, while the command dial travels freely when turned. The focus-pattern selector control is unnecessarily stiff, though, while the flash-sync port plug is not only awkward to remove but also easy to lose. Backing up Pentax's bold AF claims, the K-5 II offers impressively consistent focus in low light, even when faced with low-contrast scenes. Even with the AF Assist light disabled the K-5 II manages to lock-on against barely-lit subjects within a couple of seconds. The Auto White Balance

system also performs well when used in natural light, while video quality is better than expected as well. JPEGs see a slight boost in contrast compared to unadulterated Raw files, with details better defined and colours more appealing too. Raw files can easily be boosted in post-processing. A consistent exposure performance was also noted on test.

CANON EOS 70D £1100



In a clean break from the regular 18MP sensor found in previous entry-level and mid-range Canon DSLRs, the EOS 70D uses an all-new 20.2MP Dual Pixel CMOS AF sensor. This is partnered by Canon's powerful DIGIC 5+ processor to deliver a continuous shooting speed of 7fps, and a standard ISO range of 100-12,800. The 70D's innovative APS-C sensor uses two photodiodes for each pixel, with one reserved for phase-detect AF duties.

This enables the camera to do away with the need for contrast-detect AF during live view. It's undoubtedly a huge step up from the 60D. The 70D's optical viewfinder offers 98% coverage and a magnification of 0.95x, while a vari-angle 3in, 1,040k-dot LCD display sits on the

back, offering some touchscreen control over the camera. The built-in flash doubles as an Integrated Wireless Transmitter to offer off-camera flash control for compatible flashguns, and the 70D also offers built-in Wi-fi functionality for remote control and image transfer. The 70D's body is constructed from aluminium and polycarbonate resin with glass fibre, and feels especially solid. Those upgrading from a triple-digit EOS body will immediately notice the bulkier size and larger grip. Thanks to the new sensor, AF performance in live view represents a massive leap forward for DSLRs. That said, it's still not perfect. When light levels drop, autofocus becomes more hesitant and isn't quite as good as the best system cameras. The 70D's colour rendition is pleasing, and the Auto White Balance also performs well to produce neutral images under a range of lighting conditions. The 20.2MP sensor resolves crisp detail, with a very faint hint of luminance noise creeping in at ISO 1600 and 3200. ISO 6400 is impressive too and though chroma noise is apparent, it's not detrimental to the final image.

1,040k-dot LCD display sits on the

KEY SPECS

SENSOR:

16.28MP APS-C CMOS

FILE FORMATS:

JPEG, Raw, Raw+JPEG

DISPLAY:

Fixed 3in, 921k dots

ISO RANGE:

100-12,800 (exp to 80-51,200)

EXPOSURE MODES:

PASM, Sensitivity Priority, Auto

DRIVE MODE:

Single, Continuous, Self-timer

MOVIE MODE:

1920 x 1080p Full HD at 25fps

DIMENSIONS:

97 x 131 x 72.5mm

WEIGHT:

760g with battery and card

VERDICT

That the Pentax K-5 II is a minor upgrade on the Pentax K-5 is not necessarily a bad thing, as the Pentax K-5 was an impressive model in itself. Its headline improvement of a more sensitive AF system is minor although combined with the changes to the LCD screen and the lower launch price it's unquestionably a better choice.

BEST FOR

- Superb image quality in all lighting conditions
- Enthusiast photographers • Those shooting a range of different subjects

PROS

- Excellent build
- Large viewfinder
- Very capable AWB
- Impressive low-light AF
- Weather-sealing

CONS

- Awkward focus point select dial
- Noisy kit lens
- Fiddly flash sync cover

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

17/20

IMAGE QUALITY

19/20

VALUE

17/20



VERDICT

For the enthusiast, the EOS 70D is one of the most complete DSLRs available. It has a sharp and responsive touchscreen and feels well put together and satisfying to shoot with. The swift AF performance is likely to revolutionise the way future DSLRs perform. Overall, the EOS 70D is a very impressive and capable APS-C DSLR.

BEST FOR

- Enthusiast photographers • Excellent handling with its touchscreen and on-body controls
- Those wanting a fast AF performance

PROS

- AF performance in live view
- 19-point AF system
- Responsive touchscreen interface
- Wi-fi connectivity

CONS

- Creative filters only active during live view

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

18/20

IMAGE QUALITY

18/20

VALUE

18/20



FUJIFILM X-T1 £1100



Positioned below the X-Pro1, the X-T1 employs the same 16.3MP APS-C X-Trans sensor. This advanced chip houses more than 100,000 phase-detect pixels on its surface, which combine with the camera's standard contrast-detect AF module to form a Hybrid-AF system. The X-T1 offers an impressive maximum continuous shooting speed of 8fps.

On the back there's a 3in, 1,040k-dot LCD display, and while it's of the tiltable design for easy self-portraits, there's sadly no touchscreen functionality. The 2.36m-dot electronic viewfinder is one of the best on the market. The X-T1 also offers Wi-fi connectivity allowing you to control the camera remotely via a dedicated smartphone/tablet app. In Aperture-priority mode,

aperture is controlled using the aperture ring on the lens, something that will doubtless please old-school SLR users looking for a nostalgic shooting experience. Many of the buttons can be customised too, while the XT-1's magnesium alloy body feels reassuringly solid. More than 70 weather seals are in place to keep out moisture and dirt too. The viewfinder is larger than the optical variety found on the pro-level Canon EOS-1DX and thanks to a magnification rate of 0.77x, the view is far from tunnel-like either. Focus is almost instantly gained and in terms of overall speed, it's comparable to Panasonic's Light Speed AF system. In terms of image quality, the X-T1 delivers pleasingly natural tones with accurate colour in a range of conditions. The 256-zone metering system rarely fails to impress and the wide dynamic range allows you to retrieve a high level of detail from shadow and highlight areas provided that you're happy to shoot in Raw. Luminance and colour noise is handled well between ISO 100 and 800, with a fine level of grain creeping in as you move towards the higher ISO 3200 and 6400 settings.

Nikon D7100 £1100



Introduced as a replacement for the popular but aging D7000, the D7100 is an enthusiast-level DSLR built around a 24.1MP APS-C sensor. In keeping with other recent Nikon DSLRs the D7100's sensor has had its anti-aliasing filter removed for the benefit of detail retention. The D7100's AF module sees a marked improvement over its predecessor; while the Nikon D7000 offered a 39-point system including nine cross-type points, the Nikon D7100 increases this to 51 points including 15 cross-type points.

The pentaprism optical viewfinder provides 100% coverage and 0.94x magnification. Furthermore, an OLED panel has been added in place of the LCD, and this is used to display details such as grid lines and the levelling

function. Compared to the D7000, the rubber thumb rest now extends further downwards, and a new 'i' button joins the previous four on the left-hand side. Build quality is undoubtedly solid. Unlike some other models whose outer casings are constructed from either magnesium alloy or polycarbonate, the D7100 blends both to create a tough yet lightweight shell.

On the back of the camera, the 3.2in, 1,229k-dot LCD display produces good contrast and detail, is sufficiently bright at default settings and also delivers excellent viewing angles. Above the screen, the pentaprism viewfinder is bright and clear, and offers a 100% field-of-view. The D7100's on-board 51-point AF system covers a good portion of the viewfinder, and the camera also produces accurate, lifelike colour, with the Auto White Balance rarely making any errors of judgement. There isn't a great deal to fault with exposure metering either, but the main concern is noise; a slightly gritty texture can be seen as low as ISO 400 in most scenes. Processing Raw files is advised for more critical work.

KEY SPECS

SENSOR: 16.3MP, APS-C X-Trans II CMOS
FILE FORMATS: JPEG, Raw, Raw+JPEG
DISPLAY: Tiltable 3in, 1,040k-dot LCD
ISO RANGE: 200-6400 (exp to 100-51,200)
EXPOSURE MODES: PASM
DRIVE MODE: Single, Continuous, Self-timer
MOVIE MODE: 1920 x 1080p Full HD at 60/30fps
DIMENSIONS: 129 x 89.8 x 46.7mm
WEIGHT: 440g with battery and card

PROS

- Design
- Handling
- Image quality
- Class-leading viewfinder
- 8fps burst shooting
- Quick AF
- Wi-fi

CONS

- Lack of touchscreen
- JPEG only at expanded ISO settings
- Battery life could be better (350 shots)

VERDICT

With the X-T1, Fujifilm has continued to improve upon what is already one of the most successful ranges in the market of late. The X-Trans sensor delivers fantastic results, the build quality is sublime and it really impresses in the hand. A silver finish would have been well received, but on the whole it's a very appealing CSC.

BEST FOR

- Portability with no sacrifice in image quality
- Highly desirable, attractive design
- Delivering a performance exceeding expectations for the price

FEATURES	19/20
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PERFORMANCE	18/20
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DESIGN	19/20
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IMAGE QUALITY	19/20
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VALUE	18/20
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VERDICT

The D7100 is perhaps one of the most complete enthusiast DSLRs we've seen, with an abundance of functionality packed into a reasonably compact body. If burst shooting or low-light photography is your thing it may not be ideal, but with its impressive spec, many will consider it the camera they've been waiting for.

BEST FOR

- Accurate, lifelike and highly detailed images
- Fuss-free exposures
- Those looking to upgrade from a consumer-orientated DSLR

FEATURES	20/20
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PERFORMANCE	19/20
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DESIGN	17/20
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IMAGE QUALITY	17/20
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VALUE	17/20
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SAMSUNG NX1 £1199



There's no denying that the Samsung NX1 is a seriously feature-packed camera. One headline-grabbing feature is its DRIMe V multi-core processor, which delivers some truly impressive processing speeds and can rattle out 15fps at full resolution with continuous AF enabled. The NX1's 28MP sensor is the world's first ever APS-C-sized sensor to feature back side illumination technology and is complemented by a speedy hybrid AF arrangement that utilises 205 phase detection, 209 contrast detection and 153 cross-type AF points, with the trio covering nearly 90% of the frame.

True 4K video (4096 x 2160) can be captured at 24p straight to a memory card, it has an ISO range of 100-25,600 (extendable to ISO 51,200) and

features a very impressive 2.36m-dot OLED EVF, which thanks in no small part to the practically absent lag of just 0.005-seconds, is arguably better specified than most optical viewfinders found in competing cameras. Although the size of the NX1 is more akin to the Nikon D7100 than other CSCs at the same price point, it has an ergonomic handgrip that fits comfortably in the palm of the hand. The size of the secondary control buttons on the top left shoulder of the body are on the small side, but a wide range of the camera's functionality is accessible through the well-specified 3in, 1,036k-dot touchscreen. With a substantial burst depth and an AF performance that sees it acquire focus in near total darkness, it's hard to fault the performance – which is on a par with some of finest pro-spec DSLRs. The combination of the high megapixel count of the sensor and the absence of an anti-aliasing filter sees it deliver some of the best resolution results ever seen from an APS-C camera. What's more, ISO 3200 and 6400 are both usable settings, with chroma noise only becoming more problematic at ISO 12,800 and above.

PANASONIC LUMIX GH4 £1300



The GH4's big claim to fame is that it's the first mirrorless system camera to shoot 4K video. Thankfully, this is just the tip of the iceberg though as there's a good deal more to it than 4K video. The GH4 is built around a reworked 16.05MP Live MOS sensor, which has been paired with a new quad-core Venus Engine processor to give the GH4 significant improvements over the GH3, most significantly in ISO sensitivity and noise control.

With a native ISO range of 200-25,600, the GH4 is better equipped for low-light situations. Thanks to Panasonic's Depth from Defocus (DFD) technology, the GH4 is capable of achieving focus at blistering speeds: in the right conditions, it takes just 0.07 seconds. The GH4 can also burst shoot with continuous AF at 7.4fps (12

in AF-S mode), making it an especially good camera for capturing fast-moving action with. In terms of build quality, the GH4 is heavier than its predecessor and feels more solid in the hand thanks to its metallic chassis and extensive weather sealing. The only complaint regarding the design is the controls; the GH4 is equipped with five customisable function (Fn) buttons, which is likely to be intimidating to the novice user. In terms of its headline feature the GH4 can record 4096 x 2160-pixel video at 24p with a bitrate of 100Mbps, and 1080p Full HD video with a maximum bit rate of 200Mbps. Brand new to the GH4 is a 2.36-million-dot OLED live viewfinder. Boasting 1.34x magnification and a 100% field-of-view, the EVF is one of the closest equivalents to an optical viewfinder we've yet seen. The EVF is complemented by a 3in, 1,036k-dot vari-angle touchscreen. The GH4 produces generally decent colour, albeit lacking a little punch in the standard settings. The 1,728-zone multi-pattern metering system puts in an exemplary performance with excellent exposures.

KEY SPECS

SENSOR: 28.2MP APS-C CMOS
FILE FORMATS: JPEG, Raw, Raw+JPEG
DISPLAY: 3in, 1,036k-dot touchscreen
ISO RANGE: 100-25,600 (exp to 51,200)
EXPOSURE MODES: PASM, Auto, Custom
DRIVE MODE: Single, Continuous, Self-timer, Bracket
MOVIE MODE: 4096 x 2160 4K at 24fps, 1920 x 1080 at 60,50,30,25,24fps
DIMENSIONS: 138.5 x 102.3 x 65.8mm
WEIGHT: 550g (body only)

PROS

- RAPID image processor
- 4K video capture
- Feature-packed AF set-up
- Solid build • Wi-fi

CONS

- Heavy JPEG image processing
- Fiddly control layout
- Size of secondary control buttons

VERDICT

The NX1 delivers some truly class-leading technology in a body which is as good as any in its class. It competes with some of the very best DSLRs on the market in terms of its speed and autofocus performance, while its 4K video capture and range of connectivity options complete the package.

BEST FOR

- Those who'd appreciate the latest in APS-C technology
- Delivering a performance exceeding expectations for the price
- Action and sports enthusiasts

FEATURES	19/20
PERFORMANCE	19/20
DESIGN	19/20
IMAGE QUALITY	18/20
VALUE	18/20



KEY SPECS

SENSOR: 16.05MP Four Thirds Live MOS
FILE FORMATS: JPEG, Raw, Raw+JPEG
DISPLAY: Vari-angle 3.2in, 1,036k-dot touchscreen
ISO RANGE: 200-25,600 (exp. to base 100)
EXPOSURE MODES: PASM, iAuto
DRIVE MODE: Single, Continuous, Self-timer
MOVIE MODE: 4096 x 2160 4K at 24fps
DIMENSIONS: 133 x 93 x 84mm
WEIGHT: 560g

PROS

- Impressive 4K video
- Durable weather-sealed body
- Very fast autofocus
- DSLR styled design

CONS

- Weak Tracking AF
- Higher-resolution sensor would have been welcome
- Complicated controls

VERDICT

Significantly more than just 'the mirrorless 4K camera', the GH4 looks to be a real jack-of-all-trades. As well as pro-level video you get stunning, rich images delivered with snappy autofocus. It's not perfect, with unreliable tracking AF and an over-complex control set, but its feel, handling and style are all impressive. A commendable CSC.

BEST FOR

- Freezing fast subjects with snappy autofocus and burst shooting
- Superior quality video
- Solid DSLR-styled feel in the hand

FEATURES	19/20
PERFORMANCE	18/20
DESIGN	17/20
IMAGE QUALITY	17/20
VALUE	18/20



OLYMPUS OM-D E-M1 £1300



The OM-D E-M1 succeeds the E-5 as Olympus's pro-spec Four Thirds system camera. Built around a 16.3MP sensor the E-M1 differs from the E-M5 in two key areas: the absence of a low pass filter and the inclusion of an on-sensor phase-detect AF system. To reduce the risk of aliasing and moiré, Olympus has introduced a TruePic VII image processor, which features Fine Detail Technology II. The E-M1's five-axis sensor-shift anti-shake system is effective to four stops of correction and a continuous burst of up to 10fps is available provided that five-axis IS is switched off. Elsewhere, there's an impressive 2.36m-dot EVF with a 1.48x magnification while the tiltable 3in, 1,040k-dot rear display offers touchscreen control over the camera.

With a plethora of Art Filters, Wi-fi connectivity and a new PC socket, one of the only features the E-M1 lacks is a built-in flash. A detachable flash is supplied in the box though, which attaches via the hotshoe. The E-M1 features a tough but light, weather-sealed magnesium chassis. The speed at which the E-M1 acquires focus in Single AF is incredibly snappy thanks to its 240fps refresh rate. The Dual Fast AF system also addresses the sluggishness of Continuous AF, and is now a viable option for those looking to capture pin-sharp action shots. If you're unsure about EVFs, we can safely say that your opinion will change once you've raised the E-M1 to your eye – it displays a crystal-clear image from corner-to-corner, while the screen is also clear and extremely responsive. The AWB system in the main performs well, with punchy colours straight out of camera. The 324-zone multi-pattern metering can't be faulted either, and Raw files resolve 25 lp/mm at ISO 200 – improving on the E-M5. There are no signs of image noise until ISO 1600, and at ISO 6400 the results are usable.

SONY A7 II £1499



The Sony A7 II improves from where the A7 left off, yet inherits many of its sibling's innards, including a 24.3MP full frame sensor, Bionz X processor and 117-point phase-detect and 25 point contrast-detect autofocus setup. Improvements to the AF algorithms help to make it 30% faster in this respect than the A7 and a few modifications to the screen see an increase in resolution (up from 921k dots to 1,228k dots) with it now being vari-angle as opposed to fixed.

The key modification to the A7 II is centred on its new five-axis in-body image stabilisation system, which has helped transform handheld shooting for stills and video. To put this in perspective, we found it possible to shoot pin-sharp handheld images at 1/10sec and even slower if you have a

particularly steady hand. Design and handling is also improved, with a re-engineered grip offering a more comfortable hold. The repositioned shutter button, top plate customisable buttons and slimmer front and rear dials makes the camera much easier to operate and gives it the feel of a serious DSLR rather than a CSC. Focusing is swift, even in low light, and set to its maximum 5fps burst setting it managed some 25 frames set to Raw and JPEG before starting to slow. One gripe is the EVF's colour rendition, which appears a bit muted and lacking in saturation much like its predecessor. While the EVF might struggle to display accurate colour, the screen delivers superb image reproduction. Producing an identical level of detail to the A7, the images the A7 II kicks out are very impressive. Metering is generally accurate with little in the way of exposure compensation having to be used. Between the lower sensitivity settings of ISO 100-1600 it's almost impossible to tell the difference due to the absence of noise. Luminance noise starts to appear at ISO 3200, though it's not a problem until you bump the ISO above ISO 12,800.

KEY SPECS

SENSOR: 16.3MP Micro Four Thirds Live MOS

FILE FORMATS: JPEG, Raw, Raw+JPEG

DISPLAY: Tiltable 3in, 1,040k-dot touchscreen

ISO RANGE: 200-25,600 (exp. to base 100)

EXPOSURE MODES: PASM, iAuto, Art, Scene

DRIVE MODE: Single, Continuous, AF Tracking, Self-timer

MOVIE MODE:

1920 x 1080p Full HD at 30fps

DIMENSIONS:

130 x 93.5 x 63mm

WEIGHT: 497g with card and battery

PROS

- Build quality • Electronic viewfinder is excellent • Fast and responsive AF system • Image quality

CONS

- JPEG files a little over-processed • Controls can be overwhelming • One SD card slot

VERDICT

The E-M1 is a camera that doesn't disappoint and any enthusiasts or pros won't be left wanting. Build quality and finish is stunning, while the speed and accuracy of the AF is probably the best we've seen from a CSC. It's a camera that's a pleasure to use. Put simply, it's not just one of the best CSC models around, this is one of the best cameras full stop.

BEST FOR

- Those after a great-performing, weather-sealed alternative to a DSLR • Travel and reportage photographers • Existing PEN and E-series shooters

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

19/20

IMAGE QUALITY

18/20

VALUE

18/20



VERDICT

The A7 II's improvements are generally successful. Without doubt the five-axis stabilisation will prove hugely beneficial for those shooting video and who like to shoot handheld more often than not. There is still room for improvement, however – the EVF lacks perfect colour accuracy, the battery life isn't the best and it proves a touch noisy when shooting.

BEST FOR

- Photographers who'd like to shoot sharp handheld images using slow shutter speeds • One of the finest CSC's in the Alpha 7 series • Superb image quality from the full frame chip

PROS

- Five-axis image stabilisation • New handgrip • High-resolution EVF

CONS

- Control wheel at the rear is a touch fiddly • Loud shutter • Battery life

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

19/20

IMAGE QUALITY

18/20

VALUE

18/20



CANON EOS 7D MK II £1600



WHAT DIGITAL
Camera
GOLD

The EOS 7D Mk II arrives with some eye-catching features targeted at the wildlife and sports photographer alike. The resolution jumps to 20.2MP, while it retains an APS-C sensor, which has a 1.6x crop factor – useful for those who'd like a bit more reach from their lenses. It boasts not one but two DIGIC 6 processors, designed to improve in-camera JPEG processing and speed up the continuous burst to a blazing 10fps. Its large buffer manages a limitless number of JPEGs to be shot at 10fps, or around 31 Raw files.

The native ISO range of 100-16,000 is an improvement and is extendable to ISO 25,600 and 51,200 if required. Just like the original EOS 7D, this Mark II version also excels at video, capable of Full HD video at a variety of frame

rates, the highest being 60fps in NTSC and 50fps in PAL. Elsewhere, there's a well-proportioned 3in, 1.04 million-dot LCD screen, however it's not the tilting or touchscreen type we'd hoped for. It also lacks Wi-fi connectivity – an expected feature by today's standards.

Refinements to the viewfinder see it now feature a transmissive LCD panel that allows for the display of shooting information or a dual-axis electronic level, as well as other settings. As to be expected, the build quality is sublime and the weather sealing is so good it's second best to the EOS-1D X. New controls such as a 'rate' button and sprung lever around the joystick that's assignable to different tasks makes the image capture process even simpler.

The 65-point AF system is incredibly accurate thanks to every single point being the cross-type variety. Just as impressive is its ability to track moving subjects and set up the AF specifically for the type of response you'd like.

It backs this up with well-saturated colours and highly detailed images. Shadow detail starts to get lost past ISO 3200, but users can be confident of going to ISO 6400 if a little noise reduction is applied in post processing.

CANON EOS 6D



WHAT DIGITAL
Camera
GOLD

Cheaper, smaller and lighter than any existing Canon full frame DSLR, the EOS 6D is equipped with a 20.2MP sensor and Canon's powerful DIGIC 5+ image processor – the same processor used inside the 5D Mark III. This combination provides a native sensitivity range of ISO 100-25,600 which can be extended to a base ISO 50 and upwards to an equivalent of ISO 102,400. In addition, the 6D offers a maximum continuous burst rate of 4.5fps.

The 11-point focusing system is entirely new, though it's disappointing to see only a single cross-type sensor in the middle, with ten additional points scattered around the perimeter. The optical viewfinder, meanwhile, provides 97% frame coverage and

£1700

0.71x magnification, while the 3in rear display boasts a 1,040k-dot resolution. The 6D offers Wi-fi connectivity, and complements this with a built-in GPS system – a rarity among DSLRs. In terms of design and build the 6D shares characteristics with the 5D Mk III minus a few subtle differences. The rubberised handgrip isn't as chunky and it's also noticeably lighter in the hand. The layout of the top-plate is clear, with independent buttons to control AF mode, drive mode, metering modes and ISO.

The EOS 6D excels in terms of its low-light AF performance. The central cross-type AF point can lock onto subjects right down to -3EV, which enables the 6D to lock on even in extremely dark situations. Having said that, it can't quite match the Nikon D610 for advanced AF tracking, but the 63-zone metering system can be relied on to attain accurate exposures. The 6D's sensor is capable of resolving finely spaced horizontal lines right down to 32 lines per mm (lpmm), which is equal to its main rival – the Nikon D600 – at the same ISO sensitivity. Up to ISO 3200 you'll get clean, noise-free images.

KEY SPECS

SENSOR:

20.2MP CMOS APS-C

FILE FORMATS:

JPEG, Raw, Raw+JPEG

DISPLAY:

3in, 1,040k dots

ISO RANGE:

100-16,000 (exp. to 100-51,200)

EXPOSURE MODES:

PASM, Scene Intelligent Auto, Scene

DRIVE MODE:

10fps

MOVIE MODE:

1920 x 1080p Full HD at 60/50/30/25/24fps

DIMENSIONS:

148.6 x 112.4 x 78.2mm

WEIGHT:

910g (body only)

VERDICT

The improvements here are best described as class-leading, but it's the autofocus system that really impresses, bolstered by the fact it can shoot rapidly for sports and wildlife. It is rather disappointing there's no Wi-fi and the LCD screen is lacking touch functionality, but even with these omissions, the 7D Mark II remains one of the best APS-C DSLRs money can buy.

BEST FOR

- Sports and wildlife photographers who need a fast and reliable performer
- Those who require a rugged camera that'll work in any condition or environment
- Advanced autofocus control

PROS

- Crop factor adds extra length to telephoto lenses
- AF system • Weather sealing • Twin card slots

CONS

- Lack of vari-angle or touchscreen LCD
- No Wi-fi • New battery grip (BG-E16)

FEATURES

18/20

PERFORMANCE

19/20

DESIGN

19/20

IMAGE QUALITY

17/20

VALUE

17/20

VERDICT

It's great to finally see a new full frame body in Canon's line-up for under £2,000, and for APS-C DSLR users considering the jump up to full frame it's a logical – though still not exactly cheap – option. The addition of Wi-fi is excellent, and though it's no 5D Mark III, it goes above and beyond what most enthusiasts are calling out for.

BEST FOR

- Enthusiasts wanting to upgrade from a DSLR to full frame
- Travel photography because of the inbuilt GPS and Wi-fi
- Shooting in low light

PROS

- Image quality • ISO performance • Inclusion of both Wi-fi and GPS • AF performance in low light

CONS

- One cross-type AF point
- JPEG sharpness
- Playback zoom control
- 97% viewfinder

FEATURES

18/20

PERFORMANCE

18/20

DESIGN

18/20

IMAGE QUALITY

19/20

VALUE

18/20

★ ★ ★ ★ ★

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SONY ALPHA 7R £1700



Whereas the Alpha 7 employs a 24.3MP sensor, the Alpha 7R is fitted with a 36.4MP Sony Exmor CMOS chip. The anti-aliasing filter has been removed too in an effort to retain maximum detail and sharpness. This is paired with Sony's latest BIONZ X processor, which allows the 7R to reach a maximum continuous shooting speed of 4fps in Speed Priority Continuous mode.

Video capture at full 1080p resolution is supported at a frame rate of either 60 or 24fps. An external microphone socket is also included, as is a socket for headphones to monitor audio. In addition, the 7R offers both Wi-fi and NFC technology, allowing users to transfer images wirelessly from the camera to a smartphone or

tablet using the Sony PlayMemories app. Build quality is excellent. The 7R's magnesium-alloy shell feels up to the rigours of daily shooting, and further benefits from full weather-sealing for wet-weather use. The back of the camera is fitted with a 3in, 921k-dot LCD display, while above this sits a 2.4m-dot electronic viewfinder. The tiltable design allows the screen to be pulled out and angled for low and high shooting opportunities, however it does lack touchscreen functionality. Used in evaluative metering mode the 7R can be relied upon to deliver even exposures straight out of the camera. While the contrast-detection system is fast enough in good light, it does begin to slow when light levels drop. The 7R's sensor delivers outstanding resolution, and even managed to resolve every line on our resolution chart - a performance in keeping with the Nikon D800 and D800E. There are signs of luminance noise at ISO 800, although this isn't a detriment to overall image quality. At ISO 1600 colour noise makes a slight appearance, although once again this isn't a major issue, with ISO 6400 proving eminently usable.

Nikon D750 £1800



Tailored for enthusiasts, while catering for both the hobbyist and the aspiring pro, the D750 features a redesigned version of the 24.3MP sensor found in the D610. The presence of an optical low pass filter distinguishes it from the D810 and helps to prevent moiré patterning, although it does so at the expense of finer detail reproduction. With a maximum shooting speed of 6.5fps and a native ISO range of 100-12,800 (extendable to 51,100) it shoots faster and a stop higher than the D610. It's also Nikon's first DSLR to feature a 3.2in, 1,299k-dot screen with vari-angle functionality and introduces built-in Wi-fi connectivity to boot.

The body is a monocoque design, constructed with a mix of materials including thermoplastic and carbon

fibre. Magnesium alloy is used on the top and bottom to add strength and though by no means light, it's smaller than the D610. It feels well balanced and well matched with heavy telephoto lenses, while its control layout is more akin to Nikon's enthusiast models - the mode dial is on the left of the top-plate, with a selection of controls beside the screen. One slight disappointment is the lack of an AF-ON button at the rear.

Equipped with a new Multi-Cam 3500FX Mark II autofocus module that sports 51 AF points with 15 cross-type sensors, the D750 is quick to focus. It can lock-on in dark conditions down to -3EV and there are 1.2x (16.7MP) and 1.5x (10.3MP) crop modes if you'd like a bit more reach from your Nikon lenses. Colour rendition is much the same as the D810 and it can now perform spot white balance in Live View. Images are noise-free up to ISO 1600, while JPEG files do a great job of managing fine detail through noise reduction at higher ISOs. The D750 also has the Highlight Metering Mode from the D810 which is very effective, helping ensure highlights aren't blown and exposures are accurate.

KEY SPECS

SENSOR:
36.4MP Full frame Exmor CMOS

FILE FORMATS:
JPEG, Raw, Raw+JPEG

DISPLAY:
Tiltable 3in, 921k dots

ISO RANGE:
50-25,600

EXPOSURE MODES:
PASM, iAuto, Superior Auto, Scene, Panorama

DRIVE MODE:
Single, Continuous, Self-timer

MOVIE MODE:
1920 x 1080p Full HD at 60/25fps

DIMENSIONS:
126.9 x 94.4 x 48.2mm

WEIGHT:
407g body only

VERDICT

Although the Alpha 7R is more expensive than the Alpha 7, if you're a landscape photographer who needs the extra resolution it's a worthy investment. There are some reservations about the rather loud shutter, the camera's focusing performance and battery life, while the lens range is still rather limited, yet all things considered it remains one of the finest CSCs on the market.

BEST FOR

- Those looking for the best detail possible in a small and lightweight body
- Wi-fi and NFC
- DSLR-like handling

PROS

- Fantastic image quality
- High-end resolution
- Solid video specification
- Robust build

CONS

- AF performance not as strong as Alpha 7
- Currently a limited native lens line-up

FEATURES

19/20

PERFORMANCE

17/20

DESIGN

18/20

IMAGE QUALITY

18/20

VALUE

18/20

VERDICT

With a tilting LCD and featuring Wi-fi, the D750 is a full frame DSLR that breaks new ground and, thanks to a modified grip, it handles exceptionally. Though the resolution isn't as good as some of Nikon's full frame cameras lacking anti-alias filters, it's certainly good enough for most. It's right up there as one of the best all-round full frame DSLRs currently available.

BEST FOR

- Excellent all-round performance
- Those after their first full frame DSLR
- Users not needing to record the same level of detail as the D810

PROS

- High-resolution sensor
- Vari-angle LCD screen
- Inclusion of Wi-fi as standard

CONS

- Maximum shutter speed of 1/4000sec might be restrictive for some
- Lack of GPS

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

19/20

IMAGE QUALITY

19/20

VALUE

18/20



NIKON D810 £2700



What makes the D810 notable is that it's the first full frame DSLR to be completely lacking in an optical low-pass filter and this, combined with the 35mm full frame CMOS sensor that boasts a resolution of 36.3MP, makes it stand out as one of the best cameras out there for recording detail.

Nikon has given it a wider range of image capture formats too, including a new 'S Raw' format, which captures uncompressed files at 9MP. Despite the hefty file sizes that it churns out, it can shoot continuously at up to 5fps, or 6fps in DX crop mode. A 3.2in, 1.23m-dot LCD screen and Full HD video makes up the jaw-dropping specification.

The D810 features several button

placement refinements: the fiddly metering mode button has been replaced by a dedicated button taking the place of the bracketing button, which is now housed on the side of the camera. The grip also has a larger indentation for the middle finger and there's a larger thumb rest too, adding up to give it a more secure feel in the hand. The body is comprised of magnesium alloy and although that makes the camera heavy – at a touch under 1kg in weight – the improved weather-sealing means it's built to survive the toughest tests. Autofocus is lightning-fast as you'd expect and although the 51 focus points are concentrated towards the middle, they can be altered between focus modes.

The 91,000-pixel RGB metering sensor delivers well-balanced exposures, and a new 'highlight' mode specifically looks to preserve more highlight detail in high-contrast conditions. At its base ISO, it almost out-resolves test charts and the detail the camera captures has to be seen to be believed. Image noise is handled very well up to ISO 3200, although ISO 25,600 and 51,200 are best reserved for emergencies only.

CANON EOS 5D MARK III £3000



While resolution remains similar to that of the EOS 5D Mk II, the 22.3MP CMOS sensor inside the 5D Mk III is a completely new design that employs gapless microlenses for improved light-gathering. This is paired with Canon's latest DIGIC 5+ image processor – the same processor used inside Canon's flagship EOS 1D-X. The 5D Mk III offers a native sensitivity range of ISO 100-25,600 which can be expanded to the equivalent of ISO 102,400. Continuous shooting, meanwhile, maxes out at 6fps.

The optical viewfinder is large and bright and offers a 100% field-of-view, while the back of the camera is adorned with a 3.2in, 1,040k-dot LCD display. The body is constructed from high-grade magnesium alloy, and

further benefits from weather-sealing to keep dust and moisture out. In Single One-Shot AF, focus locks on very quickly. You can use all 61 AF points if you wish, using the joypad on the back of the camera, or a combination of the rear and front command dials. If you don't need to use all 61 AF points then the number of active AF points can be reduced to the 41 cross-type points, along with 15 points or nine points. The 5D Mk III's metering system copes well under a range of lighting conditions, though it can be guilty of underexposure at times, which requires a touch of exposure compensation (typically +0.3EV or +0.7EV) in order to get more balanced results. Images generally display a pleasing and smooth tonal range. The camera's built-in Highlight Tone Priority feature can be used to further improve gradation in brighter areas. Automatic White Balance is also reliable, delivering pleasing results under a range of lighting sources both indoors and out. Raw and JPEG images look similar at low sensitivities. Image noise is very well controlled in general, with images up to ISO 1600 relatively noise-free.

KEY SPECS

SENSOR:

36.3MP Full-frame CMOS

FILE FORMATS:

JPEG, Raw, Raw+JPEG

DISPLAY:

Fixed 3.2in, 1,229k dots

ISO RANGE:

64-12,800 (exp. to ISO 32-51,200)

EXPOSURE MODES:

PASM, Programmed Auto

DRIVE MODE:

5fps (6fps in DX crop mode)

MOVIE MODE:

1920 x 1080p Full HD at 60/50/30/25/24fps

DIMENSIONS:

146 x 123 x 81.5mm

WEIGHT:

880g body only

VERDICT

The improvements to the LCD screen are instantly noticeable and enhances the image review process no end. It's also welcome to have the varying file size options so you don't always have to shoot at 36MP. The level of detail resolved by the sensor is truly stunning, and overall it's a great upgrade to one of the best DSLRs going.

BEST FOR

- Photographers wanting to resolve the highest level of detail possible from a full frame DSLR
- Those after an 'S Raw' format
- Users looking for a solid workhorse of a camera

PROS

- High resolution
- Stunning detail capture
- Superb LCD screen
- ISO range

CONS

- Bulky
- Heavy
- Lacks Wi-fi or GPS
- No 4K video
- High price

FEATURES

19/20

PERFORMANCE

18/20

DESIGN

19/20

IMAGE QUALITY

19/20

VALUE

18/20

VERDICT

While the Mk II was more suited to specific photographic disciplines, the Mk III is a much more well-rounded, versatile DSLR, thanks to boosts in many aspects of its performance. The ISO improvements make the Mk III one of the best cameras around for shooting at high sensitivities, while the detail makes large prints a reality.

BEST FOR

- Those seeking a well-rounded, advanced DSLR
- Shooting everything from detailed landscapes to portraits or action
- High ISO shooting

PROS

- Excellent set of features
- Build quality is much better than Mk II
- Great AF system
- Video performance

CONS

- Expensive compared to some rivals
- Very occasional underexposure
- No built-in flash

FEATURES

19/20

PERFORMANCE

19/20

DESIGN

17/20

IMAGE QUALITY

19/20

VALUE

18/20

NIKON D4S £5290



The D4S is to the D4 what the D3S was to the D3 – an update that takes the best features from its predecessor and builds on them to produce a premium-grade DSLR for professional photographers. Continuous shooting speed has been increased to 11fps, but more impressive is that the D4S has the processing power to maintain the 11fps rate for up to 104 consecutive 14-bit Raw images, or 200 fine large JPEG files. Although it inherits the same 16.2MP full frame CMOS sensor used in the D4, the D4S provides a new 'Hi4' extended ISO setting that's equivalent to ISO 409,600.

The 91k-pixel metering system and 3.2in, 921k-dot LCD remain unchanged

from the D4. In addition to the 30, 25 and 24p Full HD video recording options offered by the D4, the D4S also offers 60 and 50p capture options. The D4S body is almost identical to the D4's, with only subtle modifications made to the buttons to improve handling. As you would expect from a flagship pro-spec DSLR, the D4S is also fully weather sealed. The D4S utilises the same Advanced Multi-CAM 3500FX system used in the D4 and its 51-point 3D tracking system is able to cope with the fastest moving subjects. Metering is also highly consistent and, in general use, the D4S can be fully relied upon to get exposure spot-on. The colours produced by the D4S are realistic, while the Auto White Balance delivers accurate results in most situations. Sensitivity performance impresses too, with the D4S retaining pretty much the same amount of detail at ISO 12,800 as it does at ISO 100. Although there isn't a huge upgrade in general image quality over the D4, the D4S does deliver improved images at lower to mid ISO settings. The D4S is a sublime DSLR for the professionals it's designed for.

CANON EOS 1DX £5300



The EOS-1D X resides at the top of Canon's DSLR line, where it's joined by the similar but video-leaning EOS-1DC model. Mirroring Nikon's D4 release, the 1DX combines a high-resolution 18.1MP sensor with a rapid burst rate to produce an all-round DSLR designed for professional use. The 1D X employs not one but two powerful DIGIC 5+ image processors in tandem, which enables the camera to shoot at up to 12fps in its standard continuous setting, or 14fps in a JPEG-only option.

There's also a 61-point High Density Reticular AF system which is claimed to be the most advanced yet on an EOS camera. Other notable features

include Full HD video recording and a pentaprism viewfinder that provides 100% frame coverage, together with a 3.2in, 1,040k-dot LCD display. The overall build quality of the 1D X can't be faulted. Encased within an all-metal body the 1D X further benefits from full weather-sealing, allowing it to be used on a daily basis in all kinds of inclement weather. In use, the 1D X's AF system tracks subjects exceptionally well in AI Servo mode, both in daylight and floodlit lighting conditions. With a high-speed memory card inserted we managed to shoot a burst of 17 Raw+JPEG(L) files at 12fps. The astonishing speed at which the EOS-1D X shoots is one thing, but to be able to process such a high volume of data at the speed it does is remarkable. Metering is all but faultless under a wide range of conditions. With the 1D X set to the evaluative pattern for most of our shots, it produced pleasing levels of detail in the brightest highlights. The Auto White Balance setting renders colour accurately, even at higher sensitivities. Only at ISO 6400 and above does noise become apparent. Even so, results at ISO 25,600 and 51,200 remain usable.

KEY SPECS

SENSOR: 16.2MP Full-frame
FILE FORMATS: JPEG, Raw, Raw+JPEG
DISPLAY: 3.2in LCD, 921k dots
ISO: 100-25,600 (exp. to ISO 50 and 409,600)
EXPOSURE MODES: PASM
DRIVE MODE: Single, Continuous, Quick, Self-timer, Mirror Up
MOVIE MODE: 1920 x 1080p Full HD at 60/50/30/25/24fps
DIMENSIONS: 160 x 156.5 x 90.5mm
WEIGHT: 1,350g

PROS

- High ISO performance
- Improved continuous shooting
- Enhanced video performance

CONS

- Weight
- No 4K video support

VERDICT

Although the D4S doesn't deliver a huge upgrade in general image quality over its predecessor, images shot at lower to mid ISO settings do look slightly better. This along with a slightly faster burst mode and some improvements to AF performance help to make the D4S a complete package for the professional photographer.

BEST FOR

- Professional photographers looking for a dependable workhorse
- Sports and action photographers
- Photographers who regularly shoot in low light

FEATURES

18/20

PERFORMANCE

19/20

DESIGN

19/20

IMAGE QUALITY

19/20

VALUE

18/20

VERDICT

What Canon has achieved with the EOS-1D X is remarkable. The way it controls noise to produce acceptable results even at ISO 12,800 and 25,600 is extremely impressive. Then there's the speed at which it shoots and processes images, which sets a new benchmark for professional-grade DSLRs. Overall, it's a fantastic camera.

BEST FOR

- Professional photographers and well-heeled enthusiasts
- Action and sports photographers
- Low-light situations

PROS

- Solid build
- Brilliant AF system
- Astonishing burst shooting

CONS

- Star rating not as intuitive as on EOS 5D Mark III
- No movie button

FEATURES

19/20

PERFORMANCE

19/20

DESIGN

18/20

IMAGE QUALITY

19/20

VALUE

18/20



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CANON POWERSHOT D30



The D30 shares many features with the D20, including the 12.1MP BSI CMOS sensor, 5x zoom, 3in, 461k monitor, even the same DIGIC 4 processor. The main difference is the depth below water at which it can be used; it survives use down to 25m and withstands a 2m drop. The styling is a lot more conservative, and it's easier to grip and use one-handed, thanks to the heavily textured grips on the front and rear. Made

of solid high-density plastic with a façade of aluminium, it offers fast, accurate focusing in good light with a GPS system that works well. Images can look a touch undersaturated, but switching to Vivid colour mode gives richer results, while the 12MP produces a good A3 print. However, there is chromatic aberration in the corner of the frame. Compared to its rivals, it looks good, but for the asking price we'd expect better image quality.

£260

KEY SPECS

SENSOR
12.1MP
LENS
28-140mm
f/3.9-4.8
DISPLAY
3in, 461k dots
ISO RANGE
100-3200
BURST MODE
1.9fps
DIMENSIONS
109.4 x 68
x 27.5mm
WEIGHT
218g

PROS

- Improved underwater depth
- Handling

CONS

- Price
- Lens performance
- Only available in blue



PANASONIC LUMIX FT5



Despite a similar design to its FT4 predecessor the FT5 promises to improve things, with a 16MP sensor taking the place of the previous 12.2MP one, and also both Wi-fi and Near Field Communication functionality. There's also GPS on hand to geotag images, while Optical Image Stabilisation is integrated into the lens to steady handheld shooting.

Panasonic claims the camera to be waterproof to a depth of 13m, droppable from a height of 2m and freezeproof

down to temperatures as low as -10°C. Testing verified these claims, with the camera firing into life almost straight out of the freezer, surviving a drop, and remaining operable underwater.

Focusing performance underwater proved strong, even if colour saturation was slightly muted. In drier conditions we found that images were characterised by rich colour and clearly defined details which only started to soften at around ISO 800.

£300

KEY SPECS

SENSOR
16.1MP
LENS
28-128mm
f/3.3-5.9
DISPLAY
3in LCD, 460k dots
ISO RANGE
100-3200 (exp. to ISO 6400 equivalent)
BURST MODE
10fps
DIMENSIONS
109.2 x 67.4 x 28.9mm
WEIGHT
188g (incl battery and card)

PROS

- Image quality
- Build and handling
- Wi-fi, NFC and GPS

CONS

- LCD scratches easily
- Images can lack vibrancy underwater



CANON POWERSHOT SX700 HS

As with all travel cameras the main feature of the SX700HS is its lens. With a focal length equivalent to 25-750mm (30x zoom) it's one of the most powerful on any compact camera, competing with class leaders including the Panasonic TZ60 and the Sony HX60, both of which are more expensive.

It delivers excellent image quality from its 16.1MP CMOS sensor under almost all circumstances, and is particularly good in low light situations. The superb image stabilisation

system also means that you can get full use out of the massive zoom range. The inclusion of usable manual exposure options and easy-to-use image control will appeal to those who want to get a bit more creative, while the simple, accessible controls and comfortable handling will ensure that it satisfies everyone else. The battery life allows you to shoot over 300 shots, and it's a steal when you consider that it's one of the best long-zoom compacts on the market at just £280.

£280

KEY SPECS

SENSOR
16.1MP
LENS
25-750mm
f/3.2-6.9
DISPLAY
3in, 922k-dot
ISO RANGE
100-3200
BURST MODE
8.5fps
DIMENSIONS
112 x 65 x 35mm
WEIGHT
269g

PROS

- Features
- Performance
- Image quality

CONS

- Slightly fiddly Wi-fi setup



SONY CYBER-SHOT HX60

£320

With a 30x optical zoom lens covering an extensive focal range of 24-720mm, the HX60 makes a great companion for travel and boasts a 20.4MP Exmor CMOS sensor like its predecessor. Performance speeds are three times faster however thanks to the inclusion of Sony's latest Bionz-X image processor, plus there's support for Sony's PlayMemories where users can add extra functionality to the camera by installing various apps. There's no inbuilt EVF, but the multi interface shoe does allow

Sony's EV1MK viewfinder to be attached, and there's Wi-fi connectivity featured as well.

The body also features an ergonomic feel thanks to the presence of a nicely rubberised hand grip. The top-plate has a dedicated exposure compensation dial to give it an advanced feel and it's a camera that certainly feels up to the rigours a travel camera might face.

Image quality improves over the HX50 at high ISO, but there is a tendency for it to underexpose slightly.

KEY SPECS

SENSOR
20.4MP
LENS
24-720mm
f/3.5-6.3
DISPLAY
3in, 920k-dot
ISO RANGE
80-3200 (exp. to 12,800)
BURST MODE
10fps
DIMENSIONS
108.1 x 63.6 x 38.3mm
WEIGHT
246g

PROS

- Focal range
- Solid performance
- Good handling

CONS

- Expensive EVF
- Not many improvements on predecessor



OLYMPUS STYLUS TG-3

The TG-3 follows on from the excellent TG-2 and boasts a 16MP sensor, 4x optical zoom (25-100mm) and an impressive f/2.0 maximum aperture. Submersible to depths of 15m, it can withstand falls of 2.1m onto hard surfaces and temperatures down to -10°C. Interesting features include a 1cm microscope macro function, focus stacking and inbuilt GPS for location tagging. With regards to its build, it's solid and robust as you'd expect, but some buttons such as the zoom are hard

to operate when gloves are worn. The interface is excellent, and as long as the camera is used in bright conditions, focusing is fast and accurate. A burst of high-resolution images can be rattled off at 5fps and we were very impressed by its battery life. The lens and sensor record a good level of detail, however we did experience issues with the metering system that over-exposed by around half a stop. It has Wi-fi connectivity, but it does cost quite a lot more than its closest rivals.

SONY CYBER-SHOT HX300

It's hard not to be impressed by what the HX300 offers, with its 20.4MP backlit sensor, 50x optical zoom, electronic viewfinder and a tiltable LCD screen standing out of the spec sheet. There's also manual control over exposure and full HD video, although a Raw option is not supported.

The design of the top-plate is awkward, in that the power and Finder/LCD buttons don't protrude far enough from the plate's concave profile

for them to be easily pressed. Still, the viewfinder presents a clear and detailed feed, with the LCD screen only coming unstuck in bright conditions, while the AF system is prompt enough in most situations.

Metering is sound, while colours are, on the whole, reproduced accurately. The only sore point comes when examining images at their full resolution, where the effects of noise and noise reduction make themselves known.

£350**KEY SPECS**

SENSOR	16MP
LENS	25-100mm (f/2.9)
DISPLAY	3in, 460k dots
ISO RANGE	100-6400
BURST MODE	5fps
DIMENSIONS	112 x 66 x 31mm
WEIGHT	247g

PROS

- Fast start-up time
- Creative filters
- Battery life

CONS

- Price
- Fiddly controls
- Expensive add-on lenses

**PANASONIC LUMIX TZ60**

Whereas the TZ60's predecessor – the TZ40 – featured a reasonable 20x optical zoom, the new model increases the zoom by some 50%, sporting a 30x optic covering a focal length of 24-720mm.

The 18.1MP sensor it employs is teamed up with a Venus Engine Processor, which allows it to shoot at up to 10fps, albeit for only six frames. Completing the comprehensive spec is an electronic viewfinder, NFC and Wi-fi functionality.

The TZ60 benefits from a ring around the front of

the lens that operates as a secondary control input. The camera's shell has also been upgraded to make it stronger, and the textured hand grip gives the TZ60 a premium feel in the hand. While AF speeds are improved at the long end of the zoom, it's a touch sluggish to lock-on in low-light situations. It's undoubtably one of the best travel zooms on the market and thanks to the inclusion of the EVF, Raw capture and enhanced build quality it's enough to improve on its forerunner.

£350**KEY SPECS**

SENSOR	18MP
LENS	24-720mm f/3.3-6.4
DISPLAY	3in, 300k dots
ISO RANGE	100-6400
BURST MODE	10fps
DIMENSIONS	110 x 64 x 34mm
WEIGHT	214g

PROS

- EVF addition
- Wi-fi performance
- Raw capture

CONS

- Aggressive noise reduction
- EVF a touch underspecified

**PANASONIC LUMIX FZ200**

The FZ200 boasts something quite remarkable: a 25-600mm lens with a constant f/2.8 aperture. This is paired up with Panasonic's Power O.I.S. system, with a 12.1MP sensor behind this capturing Raw and JPEG images in addition to full HD video.

The camera's grip has a pleasing rubber-like texture, while the buttons are plentiful and the build quality satisfactory. The 1.3m-dot viewfinder is also an excellent performer, although the articulated

display is a little awkward to pull out from the camera's body.

The camera focuses quickly and accurately at both ends of the zoom, and write times are better than expected too.

Images display accurate exposure and consistent white balance, although some may prefer colours more optimised than the neutral ones produced.

There's little distortion at the wide end of the lens, although noise reduction does leave images with a texture.

£440**KEY SPECS**

SENSOR	12.1MP
LENS	25-600mm f/2.8
DISPLAY	3in swivel LCD, 460k dots
ISO RANGE	100-6400
BURST MODE	12fps
DIMENSIONS	125.2 x 86.6 x 110.2mm
WEIGHT	588g

PROS

- Good AF performance
- Constant f/2.8 aperture

CONS

- LCD awkward to pull away
- Noise reduction



CANON POWERSHOT S120



The S120 has a very similar range of features to the larger PowerShot G16, with the same 1/1.7in back-illuminated 12.1MP CMOS sensor, DIGIC 6 processor, and a similar 3in display. The S120 features a 5x 24-120mm zoom, optical lens-shift image stabilisation and an automatic lens cover.

The S120 is a beautiful example of understated design; the unassuming body is strong and functional. Performance is very good. The S120 is

capable of five frames at 12.1fps, which then drops to 5.5fps. Images are well detailed and, up to ISO 800, virtually noise-free.

The major difference between the G16 and the S120 is the lens. The S120's isn't quite as good as the G16's, but it's not at all bad. Centre sharpness is excellent, and corner blurring is minimal. There is no visible chromatic aberration, but some purple fringing is caused by sensor charge leakage in high-contrast areas.

£450

KEY SPECS

SENSOR	12.1MP
LENS	24-120mm f/1.8-5.7
DISPLAY	3in, 922k-dot touchscreen
ISO RANGE	80-12,800
BURST MODE	12.1fps
DIMENSIONS	100.2 x 59 x 29mm
WEIGHT	217g

PROS

- Versatility
- Touchscreen
- Performance
- Wi-fi

CONS

- Quite pricey compared to rivals
- Battery life



CANON POWERSHOT SX60 HS

The attention-grabbing features on the SX60 HS are its new 16.1MP CMOS sensor and huge 65x optical zoom that's equivalent to 21-1365mm. A scaled-back ISO range sees it now max out at ISO 3200, while it also comes equipped with a 3in, 922k-dot vari-angle display, Wi-fi connectivity as well as Full HD (1920x1080) movie recording.

In use, trying to shoot handheld at 1365mm is a real challenge so a tripod is a necessity to capture

pin-sharp results. The body is predominantly plastic, but does sit well in the hand thanks to its ergonomically moulded handgrip. It comes adorned with a decent selection of buttons, but the d-pad is small and makes it slightly fiddly to use when composing via the electronic viewfinder.

Battery life is good, but autofocus is sluggish in low light. Resolution of fine detail is acceptable provided the sensitivity isn't pushed extensively.

£450

KEY SPECS

SENSOR	16.1MP
LENS	21-1365mm f/3.4-6.5
DISPLAY	3in, 922k-dot vari-angle LCD
ISO RANGE	100-3200
BURST MODE	6.4fps
DIMENSIONS	127 x 92 x 114mm
WEIGHT	650g

PROS

- Raw capture
- Improved EVF
- Great handling

CONS

- Slow autofocus
- No touchscreen
- Expensive



FUJIFILM X30



The X30 is the third in a line of premium compacts and sets out to improve on what has been seen before, with a new OLED viewfinder (2.36-million-dot) replacing the optical version. There's also a 3in, 920k-dot vari-angle LCD screen, Wi-fi and a much improved battery life that enables it to shoot 470 shots before a recharge.

In terms of the inner workings, a lot remains the same. For example, the lens is the same 4x optical zoom covering a range of 28-112mm and it's

combined with the same 12MP 2/3in X-Trans CMOS II sensor from the X20.

Its build quality and performance of the EVF is sublime. Simply put, it has the best viewfinder of any compact camera currently on the market. It struggles to perform as well as its rivals in low light at high ISOs, yet manages to record colours accurately, with a good level of detail resolved up to ISO 3200. There's certainly enough to recommend the X30 as one of the very best of its kind for under £500.

£480

KEY SPECS

SENSOR	12MP
LENS	28-112mm f/2-f/2.8
DISPLAY	3in, 920k-dot vari-angle LCD
ISO RANGE	100-12,800
BURST MODE	12fps
DIMENSIONS	119 x 72 x 60mm
WEIGHT	423g

PROS

- Superb EVF
- Wi-fi
- Blisteringly fast autofocus

CONS

- Sensor size
- High ISO performance



OLYMPUS STYLUS 1

With a design sharing similarities to Olympus's OM-D series, the Stylus 1 bristles with complex-looking controls. Behind the respectably fast 10.7x optical zoom (equivalent to 28-300mm) that has a fixed f/2.8 aperture across the range, lies a 1/1.7in back-side illuminated CMOS sensor. The 3in, 1.04million-dot monitor is also exceptionally good, though the touchscreen is only used for focus point selection, touch-shutter release and a few simple tasks.

Wi-fi enables users to connect a suitable Android or iOS device, while the 1.44-million-dot EVF impresses. In terms of image quality it's a match for its rivals and though image noise is visible from about ISO 800, it is well controlled, with consistent exposure, and colour reproduction being maintained up to ISO 3200. The Stylus 1's Achilles' heel is its lens that does suffer from chromatic aberration, particularly in wideangle, wide-aperture shots.

£550

KEY SPECS

SENSOR	12MP
LENS	10.7x optical zoom (28-300mm)
DISPLAY	3in, 1.04m dots
ISO RANGE	100-12,800
BURST MODE	7fps
DIMENSIONS	116 x 87 x 56.5mm
WEIGHT	402g

PROS

- Design
- Performance
- Viewfinder
- Versatile • Wi-fi

CONS

- Chromatic aberration in wideangle, wide-aperture shots



CANON POWERSHOT G7 X**£579****KEY SPECS**

SENSOR	20.2MP (1in)
LENS	24-100mm f/1.8-2.8
DISPLAY	3in, 1.04m-dot tilt touchscreen
ISO RANGE	125-12,800
BURST MODE	6.5fps
DIMENSIONS	103 x 60 x 40.4mm
WEIGHT	304g

PROS

- Touchscreen
- Premium design
- Focal range

CONS

- No hotshoe
- Lacking a phase-detection AF set-up



The G7 X lines up squarely with Sony's RX100 series and looks to take on its competition with a 1in, 20.2MP sensor that is almost three times the size of that seen in the Canon PowerShot G16. The ISO range runs from 125 to 12,800, it can shoot at up to 6.5fps, has a 31-point focusing system and a 3in, 1.04-million-dot vari-angle touchscreen. There is a built-in ND filter and Wi-fi connectivity too. The model boasts a raft of physical controls around its body and with a

slimline design slots into the pocket with ease. The control ring around the lens is particularly useful for controlling ISO, shutter speed or aperture. The solid grip is enhanced by a premium finish, while the red aluminium details finish it off well. Touch focusing is a bonus and is aided by a superb display with an intuitive menu system. Detail is well preserved up to ISO 6400 and the metering is similarly reliable. The dynamic range is also on a par with the Sony RX100.

PANASONIC LUMIX LX100**£699**

The LX100 challenges its premium compact rivals with a large Four Thirds sensor, as used in a wide range of Panasonic's CSCs. It makes up for its pedestrian zoom range (24-75mm) with a fast variable aperture of f/1.7-2.8 and despite feeling solid, which suggests it'll survive many years of use, it's not as slim as either the Sony RX100 III or Canon PowerShot G7 X. Being larger does have some benefits however. It provides a comfortable handgrip, there's space for

an excellent layout of controls and dials, with an EVF off to one corner. Focusing is fast and accurate, while the combination of a fast lens and excellent image stabilisation makes it possible to shoot handheld at low ISO sensitivities. The LX100 is a pleasure to use, and delivers top-notch images. It could be more compact and the EVF struggles when it comes to rendering accurate colour, but other than that it's a fine example of a premium compact.

**PROS**

- Fast maximum aperture
- Impressive image quality

CONS

- EVF colour rendition
- Zoom range
- No touchscreen

**PANASONIC LUMIX FZ1000****£750****KEY SPECS**

SENSOR	20MP (1in)
LENS	16x (25-400mm)
DISPLAY	3in, 921k dots
ISO RANGE	125-12,800 (exp. to 50-25,600)
BURST MODE	12fps
DIMENSIONS	137 x 99 x 131mm
WEIGHT	831g

PROS

- 4K video capture
- Wi-fi
- Build quality

CONS

- Proliferation of buttons may intimidate novice photographers



The inclusion of a 1in 20.1MP MOS sensor and impressive 16x optical zoom (25-400mm) puts the FZ1000 a cut above many compact cameras. Its Leica DC optic is a nice and bright lens (f/2.8-4.0), while it's claimed to be 275% faster than the FZ200 when it comes to focusing. The headline feature is the inclusion of 4K video, which is four times the resolution of full HD. It's possible to grab 8MP stills from video footage, while in the hand

it feels tough without being bulky. Regrettably there's no touchscreen, but the LCD can be fully articulated. The quality of the EVF (2.36 million-dot) is superb and the addition of Wi-fi will satisfy those who want to transfer images wirelessly. Detail and noise is handled well up to ISO 1600, beyond which JPEGs deteriorate due to noise reduction. It's one of the best and most enjoyable bridge cameras to use, and will appeal to most hobbyists.

SONY CYBER-SHOT RX100 III**£750**

Improving where the RX100 II left off, the RX100 III benefits from a number of key features. Although the lens covers a shorter focal range of 24-70mm, the maximum aperture now spans between f/1.8 at the wide end and f/2.8 at full telephoto. Retaining the same 20.2MP 1in chip, the sensor is paired with a new Bionz processor, but perhaps most interesting is the addition of an inbuilt EVF – a first on an RX100 model. It's innovative in its implementation, popping

up from the body much like a flash unit and boasts an impressive 1.3-million-dots. The design has resulted in the loss of the Multi-Interface shoe, so a flashgun can no longer be attached, but it has a pop-up flash. Though it could be argued the additions are incremental rather than revolutionary, it's a model that continues to get better and better. If you're after a pocket compact that delivers superb results and one of the best specifications, look no further.

**PROS**

- Addition of EVF
- Increased maximum aperture

CONS

- Lacking ability to manually select AF points on rear screen



CANON POWERSHOT G1X MK II



£750

KEY SPECS

SENSOR	12.8MP
LENS	24-120mm f/2-3.9
DISPLAY	3in, 1,040k-dot touchscreen
ISO RANGE	100-12,800
BURST MODE	5.2fps
DIMENSIONS	116.3 x 74 x 66.2mm
WEIGHT	558g

Retaining the same 1.5in CMOS sensor from its predecessor, the G1 X Mark II has a 12.8MP resolution and 5x optical zoom lens covering 24-120mm.

The lens benefits from an improved maximum aperture of f/2 and its DIGIC 6 image processor is implemented to cut down on shutter lag by over 50%. Though the viewfinder has been dispensed with (optional EVF is available), there is an impressive touchscreen 3in 1,040k-dot LCD which

is a hinged vari-angle type. As well as Wi-fi and NFC, there's a pop-up flash and built-in three-stop ND filter. While the new lens focuses more closely, the battery life remains disappointing, the handgrip looks like an afterthought and the AF system can't compete with the speed of some rivals. Detail is impressive, but for the price there are better premium compacts that can fit the pocket and have an EVF – two key areas where the G1 X Mk II misses the mark.

PROS

- Solid build
- Image quality
- Connectivity

CONS

- No EVF
- Pricey
- AF speed



FUJIFILM X100T



£999

KEY SPECS

SENSOR	16.3MP
LENS	35mm f/2
DISPLAY	3in, 1,040k dots
ISO RANGE	200-6400 (exp. to ISO 100 and 25,600 equivalent)
BURST MODE	6fps
DIMENSIONS	126.5 x 74.4 x 52.4mm
WEIGHT	400g

The X100T arrives with a number of operating and hardware improvements as well as an intriguing new advanced hybrid viewfinder, which projects an electronic view of the main subject into the lower-right corner of its optical counterpart as an aid for precise focusing. Adopting the same imaging core from the X100S, it inherits its small circular rear buttons from the X-T1. As well as the exposure compensation dial being expanded to cater for +/-3EV

adjustments, the aperture ring can now be adjusted in 1/3-stop increments. It produces lovely images and in particular maintains lovely colours.

The X100T just works. It's a superb model that produces a very enjoyable shooting experience. The altered aperture ring, three-stop exposure compensation, and d-pad AF area control all make things run smoother, and the addition of Wi-fi and USB charging bolster its credibility as a versatile, professional tool.

PROS

- Intuitive dial-led handling
- Stylish build and design

CONS

- Lacklustre video
- Awkward Macro mode



SONY CYBER-SHOT RX10

The Sony RX10 is one of the most expensive bridge cameras on the market, but features a specification to match its hefty price. It has the same 1in sensor as the RX100 II, combined with a Carl Zeiss 24-200mm lens with a fixed maximum aperture of f/2.8. The premium specification is further signified by some seriously impressive LCD and EVF technology. The viewfinder is the same as that on the premium Sony Alpha 7, meanwhile the screen measures 3in and

features a class-leading resolution of 1.229m-dots.

The RX10 produces images that are well saturated with a bright colour palette and a good level of contrast. At the base ISO of 100 the sensor resolves to around 27 lp/mm (lines per mm) and it's not until ISO 3200 where noise really becomes an issue. The RX10 offers a whole lot of camera for the price-tag and is worth serious consideration as it is probably the best bridge camera we've ever tested.

£1049

KEY SPECS

SENSOR	20MP
LENS	24-200mm f/2.8
DISPLAY	3in, 1,229k dots
ISO RANGE	125-12,800
BURST MODE	10fps
DIMENSIONS	129 x 88 x 102mm
WEIGHT	813g

PROS

- Impressive lens
- Complete feature-set
- Great images

CONS

- Eye-watering price-tag



SONY CYBER-SHOT RX1

The Sony RX1 is the world's first full frame compact camera, marrying a 24.3MP full frame sensor with a 35mm Zeiss lens that has a fast f/2 maximum aperture.

Details picked up by the lens are nothing short of magnificent, and while some users may lament the lack of a zoom lens, others will appreciate the Sony RX1's high image quality that can no doubt be largely attributed to its prime lens.

While it's true that it's expensive, it'd be hard to find a full frame DSLR and

optic of equivalent performance for less. Its compact size and reasonably discreet styling means it also presents a real advantage over full frame DSLRs with similar lenses; for the reportage photographer in particular.

With a superb build, excellent detail retention at low and high sensitivities and competent metering and Auto White Balance systems on hand, it's unquestionably one of the finest digital cameras we've seen yet.

£2600

KEY SPECS

SENSOR	24.3MP
LENS	35mm f/2
DISPLAY	3in LCD, 1,228m dots
ISO RANGE	100-25,600 (exp. to ISO 50 and 102,400 equivalent)
BURST MODE	2.5fps (exp. to 5fps)
DIMENSIONS	113.3 x 65.4 x 69.9mm
WEIGHT	482g

PROS

- Detail
- Solid build
- Low noise
- Excellent LCD

CONS

- AF can hunt
- Battery life
- Some aliasing artefacts



LISTINGS

If you want maximum control over your creative shooting options, you want an interchangeable-lens camera, whether a DSLR model or a Compact System Camera. Here we list and rate all the models on the market

DSLRs £400-£999					Stereo mic input	AF points	Burst mode (fps)	Viewfinder cov (%)	Built-in Wi-Fi	Built-in GPS	Flash	Articulated (D)	Battery life (shots)	Width (mm)	Height (mm)	Depth (mm)	Weight			
NAME & MODEL	PAGE	RRP	TESTED	SCORE	SUMMARY	SENSOR	LENS	MAX ISO	VIDEO	SHOOTING			SCREEN	DIMENSIONS						
Canon EOS 1200D	p60	£450 kit	06/14	4★	Entry level update to Canon's 1100D, the 1200D excels in the key areas of AF speed and accuracy while ISO performance is good	16MP	Canon	12,800	1080p	9	3	95	•	3in	500	129.6	99.7	78	480g	
Pentax K-500	-	£450 kit	10/13	4★	Stripped-down version of K-50 without weather sealing boasts 100% glass prism viewfinder; uses AA batteries	16.3MP	Pentax	51,600	1080p	11	6	100	•	3in	410	130	97	71	646g	
Sony Alpha 58	-	£450 kit	07/13	4★	Replacement for A57 boasts Bionz image processing engine, OLED viewfinder, plus 20MP sensor - up from 16MP	20.1MP	Sony	16,000	1080p	15	5	100	•	2.7in	•	690	129	95.5	78	492g
Pentax K-S1	p61	£550 body	03/15	4★	The fully-specified K-S1 boasts excellent image quality, while still being a lightweight, compact and portable option	12.1MP	Pentax	51,200	1080p	• 11	5.4	100	•	3in	tbc	92.5	120	69.5	498g	
Nikon D3300	p62	£600 kit	04/14	4.5★	Nikon's new entry-level DSLR is smaller than previous offerings while a sensor with no anti-aliasing filter means detail is high	24.2MP	Nikon	25,600	1080p	• 11	5	95	•	3in	700	124	98	75.5	460g	
Pentax K-30	-	£600 kit	03/14	4★	Stellar image quality make this a welcome alternative to Canon, Nikon and Sony offerings at the price	16.3MP	Pentax	25,600	1080p	11	6	100	•	3in	410	96.5	128.5	71.5	660g	
Pentax K-50	-	£600 kit	10/13	4.5★	Replacement for K-30 offers 16MP sensor, weather sealing and improved processing. Still able to shoot at up to 6fps	16.3MP	Pentax	51,200	1080p	11	4	100	•	3in	410	130	97	71	650g	
Nikon D3200	-	£650 kit	07/12	4.5★	With a 24MP sensor and excellent Guide mode, this is the perfect entry-level DSLR. Wi-fi & GPS optional	24.2MP	Nikon	12,800	1080p	• 11	4	95	•	3in	540	125	96	76	505g	
Canon EOS 100D	-	£650 kit	07/13	4.5★	Billed as the world's smallest and lightest DSLR; kit lens is the company's EF-S 18-55 f/3.5-5.6 IS STM zoom. GPS optional	18MP	Canon	12,800	1080p	• 9	4	95	•	3in	380	117	91	69	407g	
Nikon D5200	-	£720 kit	03/13	4.5★	Inspired by the D5100 and D7000, the D5200 has a vari-angle LCD, 24MP sensor and HD video. Wi-fi & GPS optional	24.1MP	Nikon	25,600	1080p	• 39	5	95	•	3in	• n/a	129	98	78	555g	
Nikon D5500	p14	£720 kit	04/15	4.5★	New DX-format DSLR in Nikon's 'advanced beginner' range, updating the impressive D5300 and adding a touchscreen	24.2MP	Nikon	25,600	1080p	• 39	5	95	•	3.2in	•	820	124	97	70	470g
Canon EOS 60D	-	£750 kit	09/12	4.5★	Still current in the company's DSLR range, this semi-pro design packs in an 18MP CMOS sensor and a vari-angle screen	18MP	Canon	25,600	1080p	• 9	5	96	•	3in	• 1,100	145	106	79	755g	
Canon EOS 700D	p63	£750 kit	Web Only	4.5★	Update to 650D comes bundled with a new 18-55mm STM kit lens, that promises improved movie AF. GPS & Eye-Fi optional	18MP	Canon	12,800	1080p	• 9	5	95	•	3in	• 440	133	100	79	580g	
Sony Alpha 65	-	£790 kit	02/12	4.5★	Featuring the same sensor as the A77, the A65 can rattle off 10 frames per second and has a crisp electronic viewfinder	24.3MP	Sony	16,000	1080p	• 15	10	100	•	3in	440	132	98	81	543g	
Nikon D5300	p63	£830 kit	01/14	4.5★	Update on the D5200 with large sensor, larger screen, HD video, and long lasting battery, should appeal to videographers	24.2MP	Nikon F	25,600	1080p	• 23	5	95	•	3.2in	• 700	125	98	76	530g	
Pentax K-5 II	p64	£870 kit	03/13	4.5★	Latest update to K-5 promises improved AF performance in low light and subject tracking with moving subjects	16.3MP	Pentax	51,200	1080p	• 11	7	100	•	3in	980	131	97	73	760g	
Pentax K-3	-	£950 body	01/14	4★	Upgrade from Pentax K-5. GPS optional. Impersonates a low pass filter. High FPS rate and is the first to carry Ricoh's name	24.2MP	Pentax	51,200	1080p	• 27	8	100	•	3.2in	560	131	100	77	800g	

DSLRs £1000-£5300					Stereo mic input	AF points	Burst mode (fps)	Viewfinder cov (%)	Built-in Wi-Fi	Built-in GPS	Flash	Articulated (D)	Battery life (shots)	Width (mm)	Height (mm)	Depth (mm)	Weight		
NAME & MODEL	PAGE	RRP	TESTED	SCORE	SUMMARY	SENSOR	LENS	MAX ISO	VIDEO	SHOOTING			SCREEN	DIMENSIONS					
Sony Alpha 77 MkII	-	£1000 body	09/14	4.5★	With the mkII Sony has brought built-in Wi-fi, great handling and an enhanced AF that will suit sports and wildlife shooters	24.3MP	Sony	25,600	1080p	• 79	12	100	•	3in	• 480	142.6	104	81	647g
Nikon D7000	-	£1100 body	01/11	4.5★	A semi-pro DSLR offering some fantastic features and which still has everything an aspiring photographer would need	16MP	Nikon	25,600	1080p	• 39	6	100	•	3in	• 1,050	132	105	77	690g
Canon EOS 70D	p64	£1100 body	11/13	4.5★	World's first DSLR to boast Dual Pixel CMOS AF technology, giving the best autofocus performance for a DSLR during live view	20.2MP	Canon	12,800	1080p	• 19	7	98	•	3in	• 920	139	104	79	755g
Nikon D7100	p65	£1100 body	05/13	4.5★	The D7100 updates the D7000 in several significant ways, and while not without fault it's still praiseworthy. Wi-fi optional	24.1MP	Nikon	25,600	1080p	• 51	6	100	•	3in	950	135	106	76	765g
Canon EOS 7D MkII	p69	£1599 body	01/15	4.5★	With a better sensor and improved AF over the 7D, this is one of the best APS-C DSLRs for enthusiasts and pros. Wi-fi optional	20.2MP	Canon	51,200	1080p	• 65	10	100	•	3in	670	148.6	112.4	78.2	910g
Canon EOS 6D	p69	£1700 body	02/13	4.5★	Superb image quality from Canon's latest – and cheapest – full frame DSLR. Also offers Wi-fi and GPS connectivity	20.2MP	Canon	102,400	1080p	• 11	45	97	•	3in	980	145	111	71	755g
Nikon D610	-	£1800 body	12/13	5★	Upgrade from D600: improved auto white balance, faster continuous shooting and a quiet continuous mode. GPS optional	24.3MP	Nikon	25,600	1080p	• 39	6	100	•	3.2in	• 900	141	113	82	850g
Sony Alpha 99	-	£1800 body	Xmas 12	4★	Sony's full frame A99 offers translucent mirror technology allied to a 19-point AF system with 11 cross sensors	24.3MP	Sony	25,600	1080p	• 19	10	100	•	3in	• 500	147	111	78	812g
Nikon D750	p71	£1800 body	12/14	5★	The D750 is one of the very best all-round enthusiast DSLRs currently available, with an impressive performance	24.3MP	Nikon	51,200	1080p	• 51	65	100	•	3.2in	• 1,230	140.5	113	78	840g
Nikon D800	-	£2600 body	06/12	5★	Offering a massive 36MP, this is the camera to go for if you want to produce ultra-large prints. GPS optional	36.3MP	Nikon	25,600	1080p	• 51	4	100	•	3.2in	900	146	123	81	900g
Nikon DF	-	£2600 kit	02/14	4★	Nikon's retro-tinged full frame DSLR has a solid spec although it lacks a video mode. Overall, its images are superb	16.2MP	Nikon	204,800	-	39	55	100	•	3.2in	1,400	143.5	110	66.5	765g
Nikon D810	p72	£2699 body	11/14	5★	Replacing the D800 and D800E, the D810 is a truly welcome upgrade and one of the very best DSLRs on the market	36.3MP	Nikon	51,200	1080p	51	12	100	•	3.2in	1,200	146	123	82	980g
Nikon D800E	-	£2600 body	08/12	4.5★	Removes the anti-aliasing filter of the D800 for even greater detail should you need it. GPS optional	36.3MP	Nikon	25,600	1080p	• 51	4	100	•	3.2in	900	146	123	81	900g
Canon EOS 5D Mk III	p72	£2999 kit	06/12	5★	An excellent full frame sensor, fast burst rate, high ISO range and advanced AF make this an impressive piece of kit. Wi-fi optional	22.3MP	Canon	102,400	1080p	• 61	6	100	•	3.2in	950	152	116	76	950g
Nikon D4	-	£5290 body	05/12	5★	Now updated by the D4S, the D4 is Nikon's previous flagship and one of the best DSLRs we've seen. GPS & Wi-fi optional	16.2MP	Nikon	204,800	1080p	• 51	10	100	•	3.2in	2,600	160	156	90	130g
Nikon D4S	p73	£5290 body	Web	5★	Nikon's flagship DSLR, the D4S takes the best features of the D4 and improved the burst speed, AF and processing power	16.2MP	Nikon	409,600	1080p	• 51	11	100	•	3.2in	3,020	160	156.5	90.5	130g
Canon EOS-1D X	p73	£5300 body	11/12	5★	A contender for the crown of best DSLR on the market, this camera is hard to fault. GPS & Wi-fi optional	18.1MP	Canon	204,800	1080p	• 61	12	100	•	3.2in	1,120	158	163	82	1,100g

COMPACT SYSTEM CAMERAS £300-£699

Name & Model	Page	RRP	Tested	Score	Summary		Sensor	Lens	Max ISO	Video	Shooting		Screen			Dimensions							
											Af Points	Burst (fps)	Viewfinder	Built-in Wi-Fi	Built-in GPS	Flash	Articulated	Touchscreen	Battery life (shots)	Width (mm)	Height (mm)	Depth (mm)	Weight
Sony Alpha 3000	-	£350	12/13	2.5★	Compact, affordable, and delivers DSLR-style results		20.1MP	Sony E	16,000	1080p	25	3.5	•	•	•	3in	•	480	128	91	84.5	353g	
Samsung NX3000	-	£350	10/14	4★	This may well be the best-value NX camera yet		20.3MP	Samsung	25,600	1080p	21	5	•	•	•	3in	•	370	117.4	66	39	266g	
Panasonic Lumix GF6	-	£400	Web	4★	Newly developed Venus Engine and a 180° tilt screen		16MP	Mic4/3	25,600	1080p	•	23	20	•	•	3in	•	340	111	65	38	323g	
Pentax Q7	-	£400	11/13	3★	Extra large sensor and improved AF		12.4MP	Pentax	12,800	1080p	25	5	•	•	•	3in	•	250	102	58	34	200g	
Olympus PEN E-PM2	-	£400	Web	3★	Update to E-PM1 offers 16.1MP sensor		16.1MP	Mic4/3	25,600	1080p	•	35	8	•	•	3in	•	360	110	64	34	269g	
Samsung NX Mini	-	£400	Web	4★	The light and compact NX Mini is very impressive		21MP	Samsung	25,600	1080p	35	6	•	•	•	3in	•	530	119	62	22.5	196g	
Sony Alpha 5000	-	£420	Web	4★	Aims to compete with entry-level DSLRs		20.1MP	Sony	16,000	1080p	-	-	•	•	•	3in	-	110	63	36	296g		
Sony Alpha 58	-	£450	05/14	4★	Replacement for A37 and A57		20.1MP	Sony	16,000	1080p	15	8	•	•	•	3in	•	700	128.6	95.5	77.7	573g	
Nikon 1 S1	-	£480	Web	4★	User-friendly with an uncluttered interface		10.1MP	Nikon 1	6400	1080p	135	60	•	•	•	3in	•	220	102	61	30	197g	
Olympus PEN E-PL5	-	£480	02/13	4★	One of the most competent CSCs at the price		16MP	Mic4/3	12,800	1080p	•	23	20	•	•	3in	•	360	110	64	34	261g	
Olympus PEN E-PL7	p61	£499	01/15	4★	High spec, compact size and superb image quality		16MP	Mic4/3	25,600	1080p	81	8	•	•	•	3in	•	350	114.9	67	38.4	357g	
Nikon 1 J4	p60	£499	11/14	4★	Excellent shooting speed and AF performance		18.4MP	Nikkor 1	12,800	1080p	•	171	20	•	•	3in	•	300	99.5	60	28.5	192g	
Fujifilm X-A1	-	£500	12/13	4★	Virtually identical to X-M1, but with a standard sensor		16.3MP	Fuji X	25,600	1080p	41	5.6	•	•	•	3in	•	350	117	66.5	39	330g	
Samsung NX300	-	£530	06/13	4.5★	Company adds to its range of Wi-fi-enabled cameras		20.3MP	Samsung	25,600	1080p	105	8.6	•	•	•	3.3in	•	320	122	64	41	284g	
Nikon 1 J3	-	£540	Web	3★	Boasts a 14.2MP sensor from range-topping V2		14.2MP	Nikon 1	6400	1080p	135	60	•	•	•	3in	•	220	101	61	29	244g	
Sony NEX-5T	-	£540	01/14	4★	APS-C sensor delivers DSLR results		16.1MP	Sony E	25,600	1080p	25	3	•	•	•	3in	•	330	111	59	39	276g	
Sony Alpha 5100	-	£549	12/14	4★	One of the very best in class, in video and image quality		24MP	Sony E	25,600	1080p	179	6	•	•	•	3in	•	400	110	63	36	283g	
Panasonic Lumix G6	-	£550	07/13	4.5★	DSLR-like performance and images		16MP	Mic4/3	25,600	1080p	•	23	7	•	•	•	3in	•	n/a	122	85	72	340g
Panasonic Lumix GM1	-	£629	01/14	4.5★	Tiny, retro compact design is impressive		16MP	Mic 4/3	25,600	1080p	23	5	•	•	•	3in	•	230	99	55	30	204g	
Sony Alpha 6000	p62	£670	06/14	4.5★	Class-leading AF and an impressive APS-C sensor		24MP	Sony	25,600	1080p	179	11	•	•	•	3in	•	310	120	67	45	344g	
Fujifilm X-M1	p63	£680	10/13	4★	Company's third CSC features X-mount lens mount		16.3MP	Fuji X	6400	1080p	54	5.6	•	•	•	3in	•	350	117	67	39	330g	
Olympus OM-D E-M10	-	£699	05/14	4.5★	Maintains the high-end features of its OM-D siblings		16MP	Mic4/3	25,600	1080p	•	81	8	•	•	•	3in	•	320	119	82	46	396g

COMPACT SYSTEM CAMERAS £700-£1700

Name & Model	Page	RRP	Tested	Score	Summary		Sensor	Lens	Max ISO	Video	Shooting		Screen			Dimensions							
											Af Points	Burst (fps)	Viewfinder	Built-in Wi-Fi	Built-in GPS	Flash	Articulated	Touchscreen	Battery life (shots)	Width (mm)	Height (mm)	Depth (mm)	Weight
Canon EOS M	-	£700	XMAS12	4.5★	Shares much of its functionality with the EOS 650D DSLR		18MP	Canon M	25,600	1080p	31	4.3	•	•	•	3in	•	230	109	66.5	32	298g	
Panasonic Lumix GM5	-	£749	01/15	4★	Small CSC with an electronic viewfinder		16MP	Mic4/3	25,600	1080p	•	23	5.8	•	•	•	3in	•	210	98.5	59.5	36	211g
Nikon 1 AW1	-	£749	12/13	3.5★	High-end CSC is waterproof and shockproof		14.2MP	Nikon 1	6400	1080p	41	15	•	•	•	3in	•	220	113	71.5	37.5	356g	
Nikon 1 V2	-	£800	02/13	3.5★	Revamp for V1. Price includes 10-30mm kit lens		14.2MP	Nikon 1	6400	1080p	•	73	15	•	•	•	3in	•	n/a	109	82	46	277g
Sony NEX-6	-	£800	01/13	4★	Excellent EVF and fast operation		16.1MP	Sony E	25,600	1080p	•	25	10	•	•	•	3in	•	360	120	67	43	287g
Panasonic Lumix GX7	-	£900	10/13	4.5★	With fast AF and tiltable EVF, delivers excellent results		16MP	Lumix G	25,600	1080p	23	40	•	•	•	3in	•	n/a	122.6	70.7	43.3	402g	
Olympus PEN E-P5	-	£900	09/13	4.5★	No built-in EVF but has fast AF plus high quality images		16MP	Mic4/3	25,600	1080p	35	9	•	•	•	3in	•	330	122	69	37	420g	
Samsung NX30	-	£900	Web only	4.5★	A DSLR-style CSC with a burst rate of up to 8fps		21MP	Samsung	26,500	1080p	247	8	•	•	•	3in	•	360	127	96	58	375g	
Fujifilm X-T1	p65	£1100	4/12	5★	One of the best premium CSCs on the market		16.3MP	Fuji X	51,200	1080p	•	49	8	•	•	•	3in	•	350	129	89.8	46.7	440g
Panasonic Lumix GH3	-	£1120	XMAS12	5★	Responsive touchscreen and superb video mode		16MP	Mic4/3	25,600	1080p	•	23	6	•	•	•	3in	•	540	133	93.4	82	470g
Fujifilm X-E1	-	£1149	01/13	4.5★	Solid build, retro design and high image quality		16MP	Fuji X	25,600	1080p	49	6	•	•	•	3in	•	350	129	75	38	350g	
Olympus OM-D E-M5	-	£1150	5/12	4.5★	The re-imagining of the classic Olympus OM		16MP	Mic4/3	25,600	1080p	•	35	9	•</td									

LENSES

A DSLR or Compact System Camera is hugely affected by the lens attached to the front, as the light hitting the sensor impacts focus, exposure and image quality. Cast your eyes over our lens listings to find out which is best for you before you make a purchase

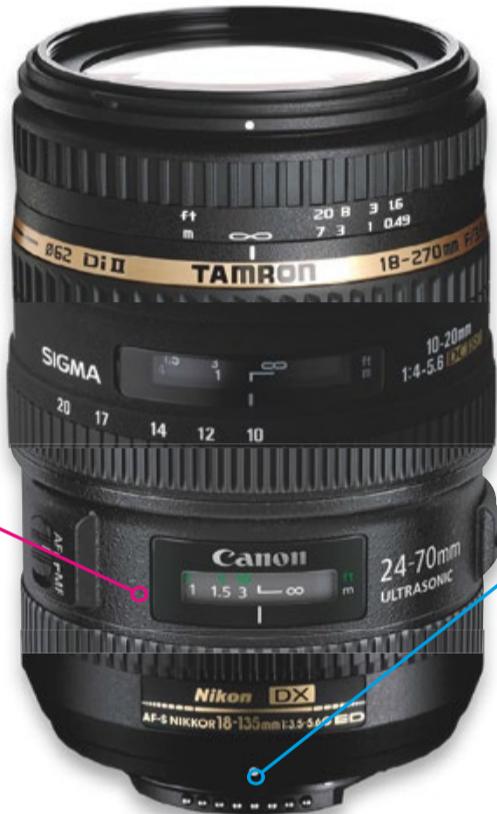
BUILT-IN FOCUS MOTOR

Some lenses incorporate a motor within the lens to drive the autofocus, while others are powered by motors within the camera. The former will focus quicker than the latter. Canon lens motors are USM (Ultrasonic Motor), Sigma HSM (Hypersonic-Motor).

MAXIMUM APERTURE
Wider apertures mean you can use faster, motion-stopping shutter speeds.

FILTER THREAD

In order to correct for colour casts or create more contrast, a screw-in filter can be used. The thread at the front of the camera will have a diameter, in mm, which will allow you to attach a variety of filters or adapters to the lens.



35MM COMPATIBILITY
Most digital sensors are smaller than 35mm, which is why lenses designed for digital can be smaller.

MAGNIFICATION FACTOR

If you're changing from a 35mm SLR, your lenses won't provide the same field of view on a DSLR unless you have a "full-frame" model. So for Nikon, Pentax and Sony DSLRs, magnify the focal length by 1.5x to get a 35mm equivalent; for Canon 1.6x and Sigma 1.7x.

LENS MOUNTS

Each manufacturer has its own lens mount and most aren't compatible with one another. For example, a Canon DSLR can't use Nikon lenses, though you can use independent brands if you get them with the right mount.

LENS TYPES EXPLAINED



FIXED FOCAL LENGTH (PRIME)

Fixed lenses offer wider maximum apertures and superior image quality. A 50mm lens is perfect for low light, 85-105mm is ideal for portraits, while a 300mm+ tele is for sports shooters.



TELEPHOTO ZOOM

Telephotos are great for sport and wildlife, while short teles are good for portraits. Telephoto lenses magnify camera shake, so look for one with Image Stabilisation to ensure you achieve the sharpest shots possible.



STANDARD ZOOM

Most DSLRs come with a standard zoom which spans from moderate wideangle to short telephoto. These 'kit' lenses are fine for most purposes, but there are alternatives that offer superior image quality.



SUPERZOOMS

While they rarely compare with shorter lenses in image quality, a superzoom offers convenience. Great for travelling when you're conscious of weight, don't expect pin-sharp, aberration-free images.



WIDEANGLE ZOOM

Wideangle lenses make subjects seem further away, enabling you to get more into the shot – perfect for landscapes and architecture. The most popular wideangle zooms are the 10-20mm and 12-24mm ranges.



MACRO LENSES

A true macro lens lets you reproduce your subject at life-size (1:1) or half life-size (1:2) on the sensor. Macro lenses come in various focal lengths and extension tubes can offer a greater magnification.

LENS SUFFIX GUIDE USED BY MANUFACTURERS

AD	Tamron Anomalous Dispersion elements	DG	Sigma's designation for all lenses	FE	Tokina floating element lenses	N	Nikon's Nano Crystal Coating
AF-DC	Nikon defocus feature	Di	Tamron lenses for full-frame sensors	G	Nikon lenses without an aperture ring	OS	Sigma's Optically Stabilised lenses
AF-S	Nikon lenses with Silent Wave Motor	Di-II	Tamron lenses designed for APS-C	HF	Sigma Helical Focusing	PRO	Tokina's Professional range of lenses
APO	Sigma Apochromatic lenses	DO	Canon diffractive optical element lenses	HID	Tamron's High Index Dispersion glass	RF	Sigma & Nikon Rear Focusing
ASL	Tamron lenses featuring aspherical elements	DT	Sony lenses for APS-C sized sensors	HLD	Tokina low dispersion glass	SD	Tokina's Super Low Dispersion element
ASP	Sigma lenses featuring aspherical elements	DX	Nikon's designation for digital lenses	HSM	Sigma's Hypersonic Motor	SDM	Pentax's Sonic Direct Drive Motor
AT-X	Tokina's Advanced Technology Extra Pro	ED	Low Dispersion elements	IF	Internal Focusing	SF	Canon Lenses with Softfocus feature
CRC	Nikon's Close Range Correction system	EF	Canon's full-frame lenses	IRF	Tokina's Internal Rear Focusing lenses	SHM	Tamron's Super Hybrid Mount
D	Nikon lenses that communicate distance info	EF-S	Canon lenses for APS-C sized sensors	IS	Canon's Image Stabilised lenses	SIC	Nikon's Super Integrated Coating
DA	Pentax lenses optimised for APS-C sized sensors	EX	Sigma's 'Excellent' range	L	Canon's 'Luxury' range of lenses	SLD	Sigma Super Low Dispersion elements
DC	Sigma's designation for digital lenses	FC	Tokina's Focus Clutch Mechanism	LD	Tamron Low Dispersion glass	SP	Tamron's Super Performance range
DF	Sigma lenses with dual focus facility	FE	Canon's fisheye lenses	M-OIS	Mega Optical Image Stabilisation	SSM	Sony/Minolta Supersonic Motor lenses

CANON

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	MOUNT						Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
						Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma					
EF 8-15mm f/4 L USM	£1499	NYT		Impressive-looking fisheye zoom lens from Canon		•	•					15	n/a	78.5	83	540g
EF-S 10-18mm f/4.5-5.6 IS STM	£299	11/14	4★	A superb ultra wideangle that's a must-have for anyone shooting landscapes and cityscapes		•	•					22	67	74.6	72	240g
EF-S 10-22mm f/3.5-4.5 USM	£990	9/09	4★	A good performer, with solid MTF curves and minimal chromatic aberration		•	•					24	77	83.5	89.8	385g
EF 14mm f/2.8 L II USM	£2810	7/10	4.5★	Updated version of above lens, with impressive resolution at f/8 but less so wide open		•	•					20	n/a	80	94	645g
EF-S 15-85mm f/3.5-5.6 IS USM	£900	3/11	4★	4-stop image stabilisation and Super Spectra coatings, together with a useful range		•	•					35	72	81.6	87.5	575g
EF 16-35mm f/2.8 L II USM	£1790	6/10	4.5★	Mark II of above lens, and a good performer with strong results at f/8 in particular		•	•					28	82	88.5	111.6	635g
EF 16-35mm f/4L IS USM	£1199	9/14	4★	Versatile and with a useful IS system, this is a very good ultra-wideangle zoom for full frame cameras		•	•					28	77	82.6	112.8	615g
TS-E 17mm f/4 L	£2920	NYT		Tilt and shift optic with independent tilt and shift rotation and redesigned coatings		•	•					25	77	88.9	106.9	820g
EF 17-40mm f/4 L USM	£940	11/08	4★	Designed to match the needs of demanding professionals – and does so with ease		•	•					28	77	83.5	96.8	500g
EF-S 17-55mm f/2.8 IS USM	£795	2/13	4★	Very capable lens with three-stop image stabilisation, Super Spectra coating and a circular aperture		•	•					35	77	83.5	110.6	645g
EF-S 17-85mm f/4-5.6 IS USM	£600	11/08	3★	Doesn't really live up to its promises. The zoom range is excellent but there are better alternatives		•	•					35	67	78.5	92	475g
EF-S 18-55mm f/3.5-5.6 IS II	£220	11/08	3.5★	Given the low price of this zoom, its results are very impressive		•	•					25	58	68.5	70	200g
EF-S 18-135mm f/3.5-5.6 IS	£500	NYT		4-stop image stabilisation and automatic panning and tripod detection		•	•					45	67	75.4	101	455g
EF-S 18-200mm f/3.5-5.6 IS	£740	10/11	4★	Automatic panning detection (for image stabilisation) and a useful 11x zoom range		•	•					45	72	78.6	102	595g
EF 20mm f/2.8 USM	£610	NYT		Wideangle lens with a floating rear focusing system and a USM motor		•	•					25	72	77.5	70.6	405g
EF 24mm f/1.4 L II USM	£2010	NYT		Subwavelength structure coating, together with UD and aspherical elements		•	•					25	77	93.5	86.9	650g
EF 24mm f/2.8 IS USM	£750	05/13	4★	Small wideangle optic with image stabilisation		•	•					25	58	67.5	48.5	270g
TS-E 24mm f/3.5 L II	£2550	NYT		Tilt and shift optic with independent tilt and shift rotation and redesigned coatings		•	•					21	82	88.5	106.9	780g
EF 24-70mm f/2.8 L USM	£1540	7/09	4.5★	A solid performer with an excellent reputation that only years in the field can secure		•	•					38	77	83.2	123.5	950g
EF 24-70mm f/2.8 L II USM	£2300	XMAS 12	5★	Professional quality standard zoom lens with a fast aperture		•	•					38	82	88.5	113	805g
EF 24-70mm f/4 L IS USM	£1499	NYT		L series zoom said to be compact, portable and aimed at both professionals and amateurs		•	•					38	77	83.4	93	600g
EF 24-105mm f/4 L IS USM	£1049	3/13	4.5★	An excellent all-round performer, and keenly priced too		•	•					45	77	83.5	107	670g
EF 24-105mm f/3.5-5.6 IS STM	£479	NYT		A versatile standard zoom lens that's an ideal route into full frame photography		•	•					40	77	83.4	104	525g
EF 28mm f/1.8 USM	£570	NYT		USM motor and an aspherical element, together with a wide maximum aperture		•	•					25	58	73.6	55.6	310g
EF 28mm f/2.8 IS USM	£730	05/13	3.5★	Lightweight and inexpensive lens, with a single aspherical element		•	•					30	52	67.4	42.5	185g
EF 28-135mm f/3.5-5.6 IS USM	£560	12/09	4.5★	Excellent optical performance, with the benefit of image stabilisation		•	•					50	72	78.4	96.8	540g
EF 28-300mm f/3.5-5.6 L IS USM	£3290	NYT		L-series optic with expansive range, image stabilisation and a circular aperture		•	•					70	77	92	184	1670g
EF 35mm f/2	£320	3/12	4.5★	A cut-price fixed focal length lens		•	•					25	52	67.4	42.5	210g
EF 35mm f/1.4 L USM	£1720	NYT		L-series construction and a wide maximum aperture, with a ring-type USM		•	•					30	72	79	86	580g
EF 40mm f/2.8 STM	£230	NYT		A portable and versatile compact pancake lens. A fast maximum aperture enables low-light shooting		•	•					30	52	68.2	22.8	130g
EF 50mm f/1.2 L USM	£1910	NYT		Very wide maximum aperture and Super Spectra coatings, and a circular aperture		•	•					45	72	85.8	65.5	580g
EF 50mm f/1.4 USM	£450	2/10	5★	Brilliant performer, with a highly consistent set of MTF curves. AF motor is a tad noisy though		•	•					45	58	73.8	50.5	290g
EF 50mm f/1.8	£130	NYT		Lightest EF lens in the range, with wide maximum aperture and a Micro Motor		•	•					45	52	68.2	41	130g
EF 50mm f/2.5 Macro	£350	NYT		Compact macro lens with floating system		•	•					23	52	67.6	63	280g
EF-S 55-250mm f/4-5.6 IS II	£330	1/12	4★	Ideal budget addition to the 18-55mm kit lens, with image stabilisation and USM		•	•					110	58	70	108	390g
EF-S 60mm f/2.8 Macro USM	£540	8/06	4★	Great build and optical quality, with fast, accurate and near-silent focusing		•	•					20	52	73	69.8	335g
MP-E65 f/2.8 1-5x Macro	£1250	NYT		Macro lens designed to achieve a magnification greater than 1x without accessories		•	•					24	58	81	98	710g
EF 70-200mm f/2.8 L USM	£1540	NYT		Non-stabilised L-series optic, with rear focusing and four UD elements		•	•					150	77	84.6	193.6	1310g
EF 70-200mm f/4 L IS USM	£1450	11/11	5★	A superb option for the serious sports and action photographer		•	•					120	67	76	172	760g
EF 70-200mm f/2.8 L IS II USM	£2800	10/10	5★	A great lens but also a costly one. Peak resolution at 0.4 cycles-per-pixel is simply amazing		•	•					120	77	88.8	199	1490g
EF 70-200mm f/4 L USM	£790	NYT		A cheaper L-series alternative to the f/2.8 versions available		•	•					120	67	76	172	705g
EF 70-300mm f/4.5-5.6 IS USM	£470	11/10	4★	A great level of sharpness and only the small apertures should be avoided		•	•					150	58	76	143	630g
EF 70-300mm f/4.5-5.6 L IS USM	£1600	7/11	5★	An L series lens with a highly durable outer shell		•	•					120	67	89	143	1050g
EF 70-300mm f/4.5-5.6 DO IS USM	£1700	NYT		3-layer diffractive optical element and image stabilisation		•	•					140	58	82.4	99.9	720g
EF 75-300mm f/4-5.6 III	£300	NYT		Essentially the same lens as the 75-300mm f/4.0-5.6 III USM but with no USM		•	•					150	58	71	122	480g
EF 75-300mm f/4-5.6 III USM	£350	9/07	2.5★	Good but not outstanding. The inclusion of a metal lens mount is positive, though		•	•					150	58	71	122	480g
EF 85mm f/1.2 L II USM	£2640	8/06	4★	A well-crafted lens, with fast and quiet AF with good vignetting and distortion control		•	•					95	72	91.5	84.0	1025g
EF 85mm f/1.8 USM	£470	2/11	5★	Non-rotating front ring thanks to rear focusing system, as well as USM		•	•					85	58	75	71.5	425g
TS-E 90mm f/2.8	£1670	NYT		Said to be the world's first 35mm-format telephoto lens with tilt and shift movements		•	•					50	58	73.6	88	565g
EF 100mm f/2 USM	£559	NYT		A medium telephoto lens with a wide aperture, making it ideal for portraits		•	•					90	58	75	73.5	460g
EF 100mm f/2.8 Macro USM	£650	11/09	4★	A solid performer, but weak at f/2.8 (which is potentially good for portraits)		•	•					31	58	79	119	600g
EF 100mm f/2.8 L Macro IS USM	£1060	1/13	5★	Stunning MTF figures from this pro-grade macro optic		•	•					30	67	77.7	123	625g
EF 100-400mm f/4.5-5.6 L IS USM	£1940	NYT		L-series construction and optics, including fluorite and Super UD elements		•	•					180	77	92	189	1380g
EF 135mm f/2 L USM	£1360	NYT		L-series construction with two UD elements and wide maximum aperture		•	•					90	72	82.5	112	750g
EF 135mm f/2.8 SF	£520	NYT		Soft-focus feature with two degrees of softness		•	•					130	52	69.2	98.4	390g
EF 180mm f/3.5 L Macro																

NIKON

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	MOUNT						Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
						Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma					
10.5mm f/2.8 G ED DX Fisheye	£678	NYT		DX format fisheye lens with Nikon's Close-Range Correction system and ED glass					•			14	n/a	63	62.5	300g
10-24mm f/3.5-4.5 G ED AF-S	£834	10/09	4★	MTF performance is good from wide open to f/11, only breaking down past f/22					•			24	77	82.5	87	460g
12-24mm f/4 G ED AF-S DX	£1044	9/09	4★	This venerable optic may be a little weak at f/4, but otherwise it's a good performer					•			30	77	82.5	90	485g
14mm f/2.8 D ED AF	£1554	7/10	5★	A really nice lens that handles well and offers excellent image quality					•			20	n/a	87	86.5	670g
14-24mm f/2.8 G ED AF-S	£1670	2/08	5★	A remarkable piece of kit, producing sharp images with little chromatic aberration					•			28	n/a	98	131.5	970g
16mm f/2.8 D AF Fisheye	£762	NYT		Full-frame fisheye lens with Close-Range Correction system and 25cm focus distance					•			25	n/a	63	57	290g
16-35mm f/4 G ED AF-S VR	£1072	6/10	5★	A fantastic lens that deserves to be taken seriously, with very little CA throughout					•			28	77	82.5	125	685g
16-85mm f/3.5-5.6 G ED VR AF-S DX	£574	3/11	4★	Boasting Nikon's second-generation VR II technology and Super Integrated Coating					•			38	67	72	85	485g
17-35mm f/2.8 D ED-IF AF-S	£1878	NYT		High-quality wideangle zoom for full-frame Nikon users					•			28	77	82.5	106	745g
17-55mm f/2.8 G ED-IF AF-S DX	£1356	3/07	4★	A higher quality standard zoom for DX-format DSLRs					•			36	77	85.5	110.5	755g
18-35mm f/3.5-4.5 G ED AF-S	£669	Xmas13	5★	Wideangle zoom with instant manual-focus override for full-frame DSLRs					•			28	77	83	95	385g
18-55mm f/3.5-5.6 G II AF-S DX	£156	12/08	3.5★	Entry-level standard zoom lens					•			28	52	73	79.5	265g
18-55mm f/3.5-5.6 G VR AF-S DX	£188	5/08	4★	An improvement over the above version, with excellent resolution the benefit of VR					•			28	52	70.5	74	205g
18-55mm f/3.5-5.6 G VR II AF-S DX	£229	NYT		Popular 3x zoom lens that is remarkably compact and lightweight, offering great portability					•			28	52	66	59.5	195g
18-105mm f/3.5-5.6 G ED VR AF-S DX	£292	8/12	4.5★	Kit lens for Nikon D90 & D7000 with Silent Wave Motor and Vibration Reduction					•			na	67	76	89	420g
18-200mm f/3.5-5.6 G IF-ED AF-S VR DX	£762	10/11	4.5★	4-stop VR II system, two ED and three aspherical elements in this DX superzoom lens					•			50	72	77	96.5	560g
18-300mm f/3.5-5.6 G ED-IF VR	£850	12/12	4★	DX-format zoom lens with wideangle to super-telephoto reach					•			45	77	83	120	830g
18-300mm f/3.5-6.3 G ED VR	£849	NYT		New DX-format 16.7x zoom with super-telephoto reach – a compact 'walkabout' lens					•			48	67	78.5	99	550g
20mm f/2.8 D AF	£584	NYT		Compact wideangle lens with Nikon's Close-Range Correction system					•			25	62	69	42.5	270g
24mm f/2.8 D AF	£427	NYT		Compact wide lens with Close-Range Correction system					•			30	52	64.5	46	270g
24mm f/1.4 G ED AF-S	£1990	8/10	5★	Nothing short of stunning. Aside from its high price there is very little to dislike about this optic					•			25	77	83	88.5	620g
24mm PC-E f/3.5 D ED PC-E	£1774	NYT		Perspective Control lens with Nano Crystal Coating and electronic control over aperture					•			21	77	82.5	108	730g
24-70mm f/2.8 G ED AF-S	£1565	7/09	5★	An excellent set of MTF curves that show outstanding consistency, easily justifying the price of this lens					•			38	77	83	133	900g
24-85mm f/3.5-4.5 G ED VR	£520	XMAS 12	5★	FX-format standard zoom with Auto Tripod detection and VR					•			38	72	78	82	465g
24-120mm f/4 G ED AF-S VR	£1072	5/11	5★	Constant maximum aperture of f/4 and the addition of VR makes this a superb lens					•			45	77	84	103	710g
28mm f/1.8 G ED AF-S	£619	4/13	5★	If you crave a wide aperture and prefer a single focal length then this Nikon prime delivers					•			25	67	73	80	330g
28mm f/2.8 D AF	£282	NYT		Compact wideangle lens with a minimum focusing distance of 25cm					•			25	52	65	44.5	205g
28-300mm f/3.5-5.6 G ED AF-S VR	£889	1/13	4.5★	Technical testing shows this zoom to be, as Nikon claims, the 'ideal walkabout lens'					•			50	77	83	114	800g
35mm f/1.8 G AF-S DX	£208	3/12	5★	Designed for DX-format DSLRs, a great standard prime lens					•			30	52	70	52.5	200g
35mm f/1.8 G ED AF-S	£TBC	NYT		Fast FX-format prime lens with bright f/1.8 aperture. Versatile and lightweight					•			25	58	72	71.5	305g
35mm f/2 DAF	£324	9/08	3★	At wide-aperture settings this optic achieves respectable resolution, which decreases with aperture					•			25	52	64.5	43.5	205g
35mm f/1.4 G ED AF-S	£1735	9/12	5★	A Nano Crystal-coated lens designed for the FX range					•			30	67	83	89.5	600g
40mm f/2.8 G AF-S DX Micro	£250	12/11	5★	A budget-priced macro lens that delivers the goods on multiple fronts					•			20	52	68.5	64.5	235g
45mm PC-E f/2.8 D ED PC-E	£1774	NYT		Perspective Control lens with ED glass and Nano Crystal Coating					•			25	77	83.5	112	780g
50mm f/1.2	£855	NYT		Ultra-fast f/1.2 aperture prime lens					•			50	52	68.5	47.5	360g
50mm f/1.4 D AF	£292	2/10	5★	Entry-level prime puts in a fine performance while offering backwards compatibility with AI cameras					•			45	52	64.5	42.5	230g
50mm f/1.4 G AF-S	£376	2/10	5★	Internal focusing and superior AF drive makes this a good alternative to the D-series 50mm f/1.4					•			45	58	73.5	54	280g
50mm f/1.8 D AF	£135	NYT		Compact, lightweight, affordable prime, will stop down to f/22					•			45	52	63	39	160g
50mm f/1.8 G AF-S	£200	9/11	5★	A cut-price standard lens for FX shooters or a short telephoto on DX-format DSLRs					•			45	58	72	52.5	185g
55mm f/2.8 Micro	£625	NYT		Macro lens with 1/2 maximum reproduction ratio					•			25	52	63.5	62	290g
55-200mm f/4-5.6 G VR AF-S DX	£314	8/07	3.5★	Designed for DX-format cameras, with Vibration Reduction and SWM technology					•			110	52	73	99.5	335g
55-300mm f/4.5-5.6 G VR AF-S DX	£378	1/12	3★	Offers a wide telephoto coverage, but better options available					•			140	58	76.5	123	530g
58mm f/1.4 G AF-S	£1599	2/14	4★	FX-format full frame premium prime lens with large f/1.4 aperture					•			58	72	85	70	385g
60mm f/2.8 D AF Micro	£405	8/06	5★	Nikon's most compact Micro lens, with Close Range Correction (CRC) system					•			22	62	70	74.5	440g
60mm f/2.8 G ED AF-S Micro	£500	NYT		Micro lens with 1:1 repro ratio, as well as a Silent Wave Motor and Super ED glass					•			18	62	73	89	425g
70-200mm f/2.8 G ED VR II AF-S	£2085	10/10	5★	Very little to fault here, with stunning image quality and consistent results at different focal lengths					•			140	77	87	209	1540g
70-200mm f/4 G ED VR	£1180	7/13	5★	Latest 70-200mm offers third-generation VR and weight savings over its more expensive f/2.8 cousin					•			1000	67	78	178.5	850g
70-300mm f/4.5-5.6 G ED AF-S VR	£556	11/10	4★	Feature-packed optic, with a VR II system, 9-bladed diaphragm, SWM and ED glass					•			n/a	67	80	143.5	745g
80-400mm f/4.5-5.6 D ED VR AF	£1512	NYT		3-stop Vibration Reduction with panning detection and a nine-bladed diaphragm					•			230	77	91	171	1340g
85mm f/3.5 G ED AF-S DX VR	£522	NYT		DX-format Micro lens with a 1:1 reproduction ratio, VR II system and ED glass					•			28	52	73	98.5	355g
85mm f/1.4 G AF-S	£1532	2/11	5★	Fast mid-tele lens with an internal focusing system and rounded diaphragm					•			85	77	86.5	84	595g
85mm f/1.8D	£385	NYT		Portable medium telephoto – ideal for portraits					•			85	62	71.5	58.5	380g
85mm f/1.8 G AF-S	£470	5/12	5★	Rear-focusing system and distance window in this medium telephoto lens					•			80	67	80	73	350g
105mm f/2.8 G AF-S VR II Micro	£782	11/09	4.5★	A very sharp lens, with swift and quiet focusing and consistent MFT results					•			31	62	83	116	720g
105mm f/2 D AF DC	£980	NYT		A portrait lens with defocus control					•			90	n/a	79	111	640g
135mm f/2 D AF DC	£1232	NYT		Defocus-Image Control and a rounded diaphragm in this telephoto optic					•			110	n/a	79	120	815g
180mm f/2.8 D ED-IF AF	£782	NYT		Useful telephoto length and internal focusing technology, together with ED glass					•	</						

OLYMPUS

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
						MOUNT											DIMENSIONS
7-14mm f/4 ED	£1900	6/08	5★	An excellently constructed objective, with image quality to match			•						25	n/a	86.5	119.5	780g
8mm f/3.5 ED Fisheye	£930	NYT		Diagonal fisheye lens, offering a 180° view and a splash-resistant construction			•						13	n/a	79	77	485g
9-18mm f/4-5.6	£640	9/09	4★	Good results up to f/11, past which point resolution drops a little			•						25	72	79.5	73	280g
12-50mm f/3.5-6.3 ED	£370	5/13	4★	Offers electromagnetic zoom mechanism plus variable zoom speed			•						20	72	57	83	211g
12-60mm f/2.8-4 ED SWD	£1130	11/08	4.5★	While not quite as consistent as the 14-54mm, this optic is perhaps more versatile			•						25	72	79.5	98.5	575g
11-22mm f/2.8-3.5	£1020	NYT		Wide angle (2x) addition to Olympus E-System lens range			•						28	72	75	92.5	485g
14-35mm f/2 ED SWD	£2400	NYT		Pro lens with Supersonic Wave Drive AF system and dust and splashproof casing			•						35	77	86	123	915g
14-42mm f/3.5-5.6 ED	£285	NYT		Small, light lens especially designed for the compact Four Thirds system standard			•						25	58	65	61	190g
14-54mm II f/2.8-3.5 II	£660	12/09	4★	An affordable lens with great resolution – only CA control lets it down a touch			•						22	67	74.5	88.5	440g
18-180mm f/3.5-6.3	£560	6/10	4★	A good performer everywhere except at 180mm, with a solid feel to it			•						45	62	78	84.5	435g
25mm f/2.8 Pancake	£270	9/08	3.5★	Excellent image quality from such a tiny optic, but the lens cap is a little fiddly			•						20	43	64	23.5	95g
35mm f/3.5 Macro	£270	NYT		Macro lens equivalent to 70mm on a full frame camera			•						14	52	71	53	163g
35-100mm f/2	£2630	NYT		One Super ED and four ED elements inside this telephoto optic			•						140	77	96.5	213.5	1650g
40-150mm f/4-5.6 ED	£300	NYT		ED and aspherical elements in this optic, together with an internal focusing system			•						90	58	65.5	72	220g
50mm f/2 ED Macro	£600	8/06	3.5★	A fast, high-quality lens, with excellent MTF curves and low chromatic aberration			•						24	52	71	61.5	300g
50-200mm f/2.8-3.5 ED SWD	£1300	NYT		Supersonic Wave Drive focusing system and an equivalent focal range of 100-400mm			•						120	67	86.5	157	995g
70-300mm f/4-5.6 ED	£450	NYT		Three ED elements and multi-coatings feature in this popular tele-zoom optic			•						96	58	80	127	620g
90-250mm f/2.8 ED	£6200	NYT		Dust and splashproof lens with 3 ED elements and a 180-500mm equivalent range			•						250	105	124	276	3270g
150mm f/2 ED	£2650	NYT		Splashproof telephoto lens with a wide maximum aperture			•						140	82	100	150	1610g
300mm f/2.8 ED	£7800	NYT		Splashproof telephoto lens with three ED elements and an inner focusing system			•						240	43	129	281	3290g

PENTAX

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
						MOUNT											DIMENSIONS
DA 10-17mm f/3.5-4.5 smc ED IF	£590	NYT		Fisheye zoom lens with Super Protection coating and Quick Shift manual focus			•						14	n/a	71.5	68	320g
DA 12-24mm f/4 smc ED AL IF	£1050	NYT		Two aspherical elements, ELD glass and a constant aperture of f/4 in this wide zoom			•						30	77	83.5	87.5	430g
DA 14mm f/2.8 smc ED IF	£730	7/10	4.5★	Best performance lies between f/5.6 and f/11, but good results can be had at f/4 too			•						17	77	83.5	69	420g
DA 15mm f/4 smc ED AL Limited	£820	NYT		Limited edition lens with hybrid aspherical and extra-low dispersion elements			•						18	49	39.5	63	212g
DA* 16-50mm f/2.8 smc ED AL IF SDM	£950	1/09	3.5★	A nice balance and robust feel, but poor sharpness at f/2.8 (which significantly improves from f/4 onwards)			•		•				30	77	98.5	84	600g
DA 17-70mm f/4 smc AL IF SDM	£630	NYT		Featuring Pentax's Supersonic Direct-drive (SDM) focusing system			•		•				28	67	75	93.5	485g
DA 18-55mm f/3.5-5.6 smc II ED AL IF	£220	1/09	3.5★	Something of a bargain. Only the maximum apertures and awkward manual focusing really let it down			•		•				25	52	68	67.5	220g
DA 18-55mm f/3.5-5.6 smc AL WR	£229	NYT		A weather resistant construction and an aspherical element, as well as SP coating			•		•				25	52	68.5	67.5	230g
DA 18-135mm f/3.5-5.6 DA ED DC WR	£600	6/11	3.5★	A weather resistant mid-range zoom lens			•		•				40	62	73	76	405g
DA 18-270mm f/3.5-6.3 smc EDSDM	£699	NYT		15x superzoom for company's K-mount DSLRs featuring two extra-low dispersion (ED) elements			•		•				49	62	76	89	453g
DA 20-40mm f/2.8-4 ED Limited DC WR	£829	NYT		With state-of-the-art HD coating, a completely round-shaped diaphragm, and weather-resistant			•		•				28	55	68.5	71	283g
DA 21mm f/3.2 smc AL Limited	£600	NYT		This limited-edition optic offers a floating element for extra-close focusing			•		•				20	49	63	25	140g
FA 31mm f/1.8 smc AL Limited	£1149	NYT		Aluminium body; when used on a Pentax DSLR offers a perspective similar to that of the human eye			•		•				30	58	68.5	65	345g
DA 35mm f/2.8 smc Macro	£640	9/08	4.5★	Despite slight edge softness, this lens performs excellently and is a pleasure to use			•		•				14	49	46.5	63	215g
DA 35mm f/2.4 smc DS AL	£180	3/12	5★	A budget price prime lens for beginners			•		•				30	49	63	45	124g
DA 40mm f/2.8 smc Limited	£450	NYT		Pancake lens with SMC coating and Quick Shift focusing system			•		•				40	49	63	15	90g
DA 40mm XS f/2.8 XS	£325	NYT		The world's smallest fixed focal length lens			•		•				40	N/A	62.9	9	52g
FA 43mm f/1.9 smc Limited	£729	NYT		Focal length is ideal for portraits as well as everyday use, and features an smc multi-layer coating			•		•				45	49	27	64	155g
FA 50mm f/1.4 smc	£399	NYT		High quality fast prime. The 'FA' indicates that its image circle covers the 35mm full-frame format			•		•				45	49	63.5	38	220g
DA 50mm f/1.8 smc DA	£249	NYT		Affordable short telephoto lens ideal for portraits			•		•				45	52	28.5	63	122g
DFA 50mm f/2.8 smc Macro	£550	NYT		Macro lens capable of 1:1 reproduction and with a Quick Shift focus mechanism			•		•				19	49	60	67.5	265g
DA* 50-135mm f/2.8 smc ED IF SDM	£1200	11/12	4★	Constant f/2.8 aperture; well suited to portraiture and mid-range action subjects			•		•				100	67	76.5	136	765g
DA 50-200mm f/4-5.6 smc ED WR	£210	NYT		Weather-resistant construction, Quick Shift focus system and an SP coating			•		•				n/a	49	69	79.5	285g
DA* 55mm f/1.4 smc SDM	£800	2/10	4.5★	Even despite questions about the particular sample tested, this lens scores highly			•		•				45	58	70.5	66	375g
DA 55-300mm f/4-5.8 smc ED	£370	10/12	4★	The lens boasts a useful focal range, as well as a dirt-resistant SP coating			•		•				140	58	75	111.5	440g
DA 55-300mm f/4-5.8 ED WR	£399	NYT		Weatherproof HD telephoto lens featuring quick shift focusing system			•		•				140	58	71	111.5	466g
DA 60-250mm f/4 smc ED IF SDM	£1450	10/12	4.5★	With a constant f/4 aperture and an ultrasonic motor for speedy focusing			•		•				110	67	167.5	82	1040g
DA 70mm f/2.4 smc AL Limited	£600	NYT		Medium telephoto lens with an aluminium construction and a Super Protect coating			•		•				70	49	63	26	130g
FA 77mm f/1.8 smc Limited	£1050	NYT		With Pentax's Fixed Rear Element Extension focusing system for 'sharp, crisp images'			•		•				70	49	48	64	270g
D-FA 100mm f/2.8 Macro	£700	NYT		Designed for both digital and film cameras, this macro lens boasts a 1:1 repro ratio			•		•				30	49	67.5	80.5	345g
D-FA 100mm f/2.8 Macro WR	£680	11/12	5★	Street price makes this something of a bargain for a true macro offering full-frame coverage			•	</td									

SAMYANG

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
						MOUNT									DIMENSIONS		
8mm f/3.5 UMC Fisheye CS II	£274	NYT		Wideangle fisheye lens designed for digital reflex cameras with APS-C sensors		•	•	•	•	•	•		30	N/A	75.	77.8	417g
10mm f/2.8 ED AS NCS CS	£429	NYT		Features a nano crystal anti-reflection coating system and embedded lens hood		•	•	•	•	•	•		24	N/A	86	77	580g
14mm f/2.8 ED UMC	£279	NYT		Ultra wideangle manual focus lens; bulb-like front element means no filters can be used		•	•	•	•	•	•		28	N/A	94	87	552g
16mm f/2.0 ED AS UMC CS	£389	NYT		Ultra wideangle lens for digital reflex cameras and mirrorless compact cameras fitted with APS-C sensors		•	•	•	•	•	•		20	N/A	89.4	83	583g
24mm f/1.4 AS UMC	£499	NYT		Fast ultra wideangle manual focus lens comprising 13 lenses arranged in 12 groups		•	•	•	•	•	•		25	77	95	116	680g
24mm f/3.5 AS T-S ED AS UMC	£789	NYT		Wideangle tilt-shift prime featuring 16 glass elements and f/3.5 maximum aperture		•	•	•	•	•	•		20	82	110.5	113	680g
35mm f/1.4 AS UMC	£369	3/13	4.5★	While manual focus only, this prime impressed us in real-world use, making it something of a bargain		•	•	•	•	•	•		30	77	83	111	660g
35mm T1.5 AS UMC VDSLRL	£419	NYT		VDSLRL version of 35mm f/1.4 AS UMC with de-clicked aperture ring for silent operation when used for video		•	•	•	•	•	•		30	77	83	111	660g
85mm f/1.4 IFMC	£239	NYT		Short fast telephoto prime, manual focus, aimed at portrait photographers		•	•	•	•	•	•		100	72	78	72.2	513

SIGMA

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
						MOUNT								DIMENSIONS			
4.5mm f/2.8 EX DC	£739	NYT		Circular fisheye lens designed for digital, with SLD glass and a gelatin filter holder		•	•	•	•	•	•		13	n/a	76	77.8	470g
8mm f/3.5 EX DG	£799	NYT		The world's only 8mm lens equipped with autofocus also boasts SLD glass		•	•	•	•	•	•		13	n/a	73.5	68.6	400g
8-16mm f/4.5-5.6 DC HSM	£800	10/10	4★	Excellent performance at 8mm which sadly drops at the 16mm end		•	•	•	•	•	•		24	72	75	105.7	555g
10mm f/2.8 EX DC	£599	NYT		A Hyper Sonic Motor (HSM) and built-in hood in this diagonal fisheye lens		•	•	•	•	•	•		13	n/a	75.8	83	475g
10-20mm f/3.5 EX DC HSM	£650	3/10	5★	An absolute gem of a lens that deserves a place on every photographer's wish list		•	•	•	•	•	•		24	82	87.3	88.2	520g
10-20mm f/4-5.6 EX DG HSM	£550	8/09	5★	A fine all-rounder, thanks to MTF curves which stay above 0.25 cycles-per-pixel down to f/16		•	•	•	•	•	•		24	77	83.5	81	470g
12-24mm f/4.5-5.6 EX DC HSM	£868	8/09	4★	A tightly matched set of MTF curves, but APS-C users are advised to look at the 10-20mm instead		•	•	•	•	•	•		28	n/a	87	102.5	600g
15mm f/2.8 EX DG	£629	7/10	4★	This fisheye optic puts in a very solid performance – not to be dismissed as a gimmick!		•	•	•	•	•	•		15	n/a	73.5	65	370g
17-50mm f/2.8 EX DC OS HSM	£689	NYT		FLD and aspherical elements, a constant f/2.8 aperture and Optical Stabilisation		•	•	•	•	•	•		28	77	83.5	92	565g
17-70mm f/2.8-4 DC Macro OS HSM	£449	NYT		Redesign of this well-received lens launches the 'Contemporary' range and sees it in more compact form		•	•	•	•	•	•		22	72	79	82	470g
18-35mm f/1.8 DC HSM	£799	11/13	5★	Said to be the world's first constant f/1.8 zoom; DOF equivalent of constant f/2.7 on full frame		•	•	•	•	•	•		28	72	78	121	810g
18-200mm f/3.5-6.3 DC	£349	3/08	3★	Good CA control at 200mm but otherwise an average performer		•	•	•	•	•	•		45	62	70	78.1	405g
18-200mm f/3.5-6.3 DC OS	£449	3/08	4★	Excellent resolution and consistent performance, but control over CA could be a little better		•	•	•	•	•	•		45	45	79	100	610g
18-250mm f/3.5-6.3 DC OS HSM	£572	1/10	4.5★	A very capable set of MTF curves that only shows minor weakness at wide apertures		•	•	•	•	•	•		45	72	79	101	630g
18-250mm f/3.5-6.3 DC Macro OS HSM	£500	NYT		Ultra-compact 13.8x high zoom ratio lens designed exclusively for digital SLR cameras		•	•	•	•	•	•		35	62	73.5	88.6	470g
18-300mm f/3.5-6.3 DC Macro OS HSM C	£499	NYT		Compact and portable high ratio zoom lens offering enhanced features to make it the ideal all-in-one lens		•	•	•	•	•	•		39	72	79	101.5	585g
24-70mm f/2.8 EX DG IF HSM	£899	8/09	5★	Not perfect, but an excellent alternative to Canon and Nikon's 24-70mm lenses, with great MTF curves		•	•	•	•	•	•		38	82	88.6	94.7	790g
24-105mm f/4 DG OS HSM A	£849	3/14	4.5★	Serious full frame alternative to own-brand lenses at a lower price but with no compromises in the build		•	•	•	•	•	•		45	82	89	109	885g
30mm f/1.4 EX DC HSM	£490	9/08	3★	A consistent performer, with slightly weaker but not unacceptable performance wide-open		•	•	•	•	•	•		40	62	76.6	59	430g
35mm f/1.4 DG HSM Art	£799	9/13	5★	Large aperture prime; first lens in company's 'Art' series		•	•	•	•	•	•		30	67	77	94	665g
50mm f/1.4 EX DC HSM	£459	2/10	5★	This lens may be priced above the norm, but it delivers results which are similarly elevated		•	•	•	•	•	•		45	77	84.5	68.2	505g
50mm f/1.4 DG HSM Art	£849	7/14	4★	This lens is a unique design that pays off in truly excellent image quality		•	•	•	•	•	•		40	77	85.4	100	815g
50-500mm f/4.5-6.3 DG OS HSM	£1499	4/11	4★	A 10x zoom range, SLD elements and compatibility with 1.4x and 2x teleconverters		•	•	•	•	•	•		50-180	95	104.4	219	1970g
70-200mm f/2.8 EX DG OS HSM	£1539	NYT		Two FLD glass elements, said to have the same dispersive properties as fluorite		•	•	•	•	•	•		140	77	86.4	197	1430g
70-300mm f/4.5-6.3 APO DG Macro	£235	NYT		A 9-bladed diaphragm and two SLD elements in this tele-zoom lens		•	•	•	•	•	•		95	58	76.6	122	550g
70-300mm f/4-5.6 DG Macro	£173	5/09	3★	Generally unremarkable MTF curves, and particularly poor at 300mm		•	•	•	•	•	•		95	58	76.6	122	545g
85mm f/1.4 EX DG HSM	£890	2/11	5★	The Sigma's resolution from f/4 to f/8 is excellent		•	•	•	•	•	•		85	77	86.4	87.6	725g
105mm f/2.8 EX DG OS HSM	£649	12/11	4.5★	An optically-stabilised macro lens		•	•	•	•	•	•		31.2	62	78	126.4	725g
120-300mm f/2.8 DG HSM	£3599	NYT		First lens in company's 'Sports' series; switch enables adjustment of both focus speed and focus limiter		•	•	•	•	•	•		150-250	105	124	291	TBA
150mm f/2.8 EX DG OS HSM	£999	NYT		A macro lens offering image stabilisation		•	•	•	•	•	•		38	72	79.6	150	950g
150-500mm f/5-6.3 DG OS HSM	£999	6/09	3★	Significant softness at wide maximum apertures for all focal lengths		•	•	•	•	•	•		220	86	94.7	252	1780g
150-600mm f/5-6.3 DG OS HSM S	£1599	1/15	4★	This portable, high-performance telephoto zoom from Sigma's Sports line is dust and splashproof		•	•	•	•	•	•		260	105	121	290.2	2860g
180mm f/2.8 EX DG OS HSM	£1499	4/13	5★	1:1 macro lens featuring three FLD glass elements and floating inner focusing system		•	•	•	•	•	•		47	86	95	204	1640g
300mm f/2.8 APO EX DG	£2899	NYT		Extra Low Dispersion (ELD) glass, multi-layer coatings and a Hyper Sonic Motor		•	•	•	•	•	•		250	46	119	214.5	2400g
300-800mm f/5.6 EX DG HSM	£6999	NYT		A constant aperture of f/5.6 throughout the expansive 300-800mm zoom range		•	•	•	•	•	•		600	46	156.5	544	5880g
500mm f/4.5 APO EX DG	£4799	NYT		Telephoto lens with multi-layer coatings to 'optimise the characteristics of DSLRs'		•	•	•	•	•	•		400	46	123	350	3150g
800mm f/5.6 APO EX DG	£5499	NYT		HSM and compatibility with Sigma's 1.4x EX APO and 2x EX APO teleconverters		•	•	•	•	•	•		700	46			

SONY

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
11-18mm f4.5-5.6 DT	£609	9/09	3★	A solid overall performance that simply fails to be outstanding in any way		•							25	77	83	80.5	360g
16mm f/2.8 Fisheye	£709	NYT		Fisheye lens with a close focusing distance of 20cm and a 180° angle of view		•							20	n/a	75	66.5	400g
16-35mm f/2.8 ZA SSM T*	£1729	9/09	4.5★	High-end Zeiss wideangle zoom lens ideal for full frame Alpha DSLRs		•							28	77	83	114	900g
16-50mm f/2.8 SSM	£569	4/12	4★	Bright short-range telephoto lens		•							100	72	81	88	577g
16-80mm f/3.5-4.5 ZA T*	£709	4/09	4.5★	Carl Zeiss standard zoom lens		•							35	62	72	83	445g
16-105mm f/3.5-5.6 DT	£559	3/09	3★	An ambitious lens that is good in parts. Quality drops off at 105mm		•							40	62	72	83	470g
18-135mm f/3.5-5.6 DT SAM	£429	NYT		A versatile zoom with Direct Manual Focus		•							45	62	76	86	398g
18-200mm f/3.5-6.3 DT	£509	4/08	3★	While the focal range is certainly useful, the lens is an overall average performer		•							45	62	73	85.5	405g
18-250mm f/3.5-6.3 DT	£559	1/10	3.5★	Good overall, but performance dips at longer focal lengths		•							45	62	75	86	440g
20mm f/2.8	£559	9/11	3.5★	Wideangle prime lens with rear focusing mechanism and focus range limiter		•							25	72	78	53.5	285g
24mm f/2 ZA SSM T*	£1119	NYT		An impressively bright wideangle Carl Zeiss lens		•							19	72	78	76	555g
24-70mm f/2.8 ZA SSM T*	£1679	7/09	5★	Carl Zeiss mid-range zoom lens with superb optics ideal for full frame Alpha DSLRs		•							34	77	83	111	955g
28-75mm f/2.8 SAM	£709	NYT		A constant f/2.8 aperture and a Smooth Autofocus Motor (SAM) in this standard zoom		•							38	67	77.5	94	565g
30mm f/2.8 DT SAM Macro	£179	3/12	4★	Macro lens designed for digital with 1:1 magnification and Smooth Autofocus Motor		•							12	49	70	45	150g
35mm f/1.4 G	£1369	NYT		With an equivalent focal length of 52.5mm, a wide aperture and aspherical glass		•							30	55	69	76	510g
35mm f/1.8 DT SAM	£179	NYT		Budget price indoor portrait lens		•							23	55	70	52	170g
50mm f/1.8 DT SAM	£159	3/10	4.5★	A very useful lens that performs well and carries a rock-bottom price tag		•							34	49	70	45	170g
50mm f/1.4	£369	2/10	5★	While this lens performs well overall, performance at f/1.4 could be better		•							45	55	65.5	43	220g
50mm f/1.4 ZA SSM	£1300	Web	4★	Carl Zeiss design said to be ideal for quality-critical portraiture and low-light shooting		•							45	72	81	71.5	518g
50mm f/2.8 Macro	£529	NYT		A macro lens with a floating lens element		•							20	55	71.5	60	295g
55-200mm f/4-5.6 DT SAM	£219	NYT		Designed for cropped-sensor DSLRs, with a Smooth Autofocus Motor		•							95	55	71.5	85	305g
55-300mm f/4.5-5.6 DT SAM	£309	NYT		Compact, lightweight telephoto zoom offering smooth, silent operation		•							140	62	77	116.5	460g
70-200mm f/2.8 G	£1889	NYT		Super Sonic Wave motor and a constant f/2.8 aperture in this pro-grade tele zoom		•							120	77	87	196.5	1340g
70-200mm f/2.8 G SSM II	£TBC	NYT		High-performance G Series telephoto zoom lens		•							120		87	196.5	1340g
70-200mm f/4 G OSS	£949	10/14	4★	Compact, lightweight telephoto zoom lens for full-frame E-mount bodies		•							100	72	80	175	840g
70-300mm f/4.5-5.6 G SSM	£869	12/10	3.5★	G-series lens with ED elements, Super Sonic wave Motor and a circular aperture		•							120	62	82.5	135.5	760g
70-400mm f/4.5-6.6 G SSM II	£1799	NYT		Redesign of original features a new LSI drive circuit and promises faster autofocus		•							150	77	95	196	1500g
75-300mm f/4.5-5.6	£219	8/12	3★	Compact and lightweight zoom with a circular aperture		•							150	55	71	122	460g
85mm f/1.4 ZA Planar T*	£1369	NYT		Fixed focal length lens aimed at indoor portraiture		•							85	72	81.5	72.5	560g
85mm f/2.8 SAM	£219	NYT		A light, low price portraiture lens		•							60	55	70	52	175g
100mm f/2.8 Macro	£659	NYT		Macro lens with circular aperture, double floating element and wide aperture		•							35	55	75	98.5	505g
135mm f/1.8 ZA Sonnar T*	£1429	NYT		A bright, Carl Zeiss portrait telephoto lens		•							72	77	84	115	1004g

TAMRON

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Sony Alpha	Canon	Four Thirds	Nikon	Pentax	Sigma	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
10-24mm f/3.5-4.5 SP AF Di II LD Asph. IF	£511	2/10	3.5★	Good consistency at 10mm and 18mm, but a steep decline at 24mm		•	•		•	•			24	77	83.2	86.5	406g
16-300mm f/3.5-6.3 Di II VC PZD Macro	£600	8/14	4★	Versatile megazoom, a very good all-in-one solution, as long as you won't need to enlarge to A2 size		•	•	•	•	•			39	67	99.5	75	540g
17-50mm f/2.8 SP AF XR Di II LD Asph. IF	£450	2/09	4.5★	Very good optical performance, which peaks at f/5.6-8		•	•	•	•	•			27	67	74	81.7	434g
17-50mm f/2.8 SP AF XR Di II VC LD Asph. IF	£541	4/10	4.5★	Very strong performance at longer focal lengths but weaker at the other end		•	•	•	•	•			29	72	79.6	94.5	570g
18-200mm f/3.5-6.3 AF XR Di II LD Asph. IF Macro	£306	3/08	3★	Excellent CA control in the centre, but unremarkable wideangle performance		•	•	•	•	•			45	62	73	83.7	423g
18-200mm f/3.5-6.3 AF XR Di II LD Asph. IF Macro	£550	NYT		A redefined all-in-one lens to replace a shorter kit lens		•	•	•	•	•			50	62	62	96.7	460g
18-270mm f/3.5-6.3 AF XR Di II LD Asph. IF Macro	£613	1/10	4.5★	Much better results at shorter focal lengths than longer ones, but still impressive		•	•	•	•	•			49	72	79.6	101	550g
18-270mm f/3.5-6.3 AF Di II VC LD PZD IF Macro	£663	10/11	3★	The next-generation incarnation offers a new form of ultrasonic engine		•	•	•	•	•			49	62	74.4	88	450g
24-70mm f/2.8 SP Di VC USD	£1099	10/12	5★	Fast zoom with image stabilisation for both full-frame and APS-C cameras		•	•	•	•	•			38	82	88.2	116.9	825g
28-75mm f/2.8 SP AF XR Di LD Asph. IF Macro	£460	NYT		Standard zoom with constant f/2.8 aperture and minimum focusing distance of 33cm		•	•	•	•	•			33	67	73	92	510g
28-300mm f/3.5-6.3 AF XR Di LD Asph. IF Macro	£664	NYT		A useful 10.7x zoom range and low-dispersion elements in this optic		•	•	•	•	•			49	62	73	83.7	420g
60mm f/2 SP AF Di II LD IF Macro	£550	12/10	5★	Macro lens designed for APS-C sensor cameras, with 1:1 reproduction ratio		•	•	•	•	•			23	55	73	80	400g
70-200mm f/2.8 SP AF Di LD IF Macro	£817	10/09	4★	No image stabilisation and no advanced AF system, but at this price it's a steal		•	•	•	•	•			95	77	89.5	194.3	1150g
70-200mm f/2.8 Di VC USD	£TBC	NYT		Compact yet full-size telephoto zoom with vibration compensation		•	•	•	•	•			130	77	85.8	188.3	1470g
70-300mm f/4-5.6 SP VC USD	£300	1/12	4★	Ultrasonic Silent Drive (USD) technology for focusing and Vibration Compensation		•	•	•	•	•			150	62	81.5	142.7	765g
70-300mm f/4-5.6 AF Di LD Macro	£170	11/10	3.5★	Low dispersion glass and compatible with both full-frame and cropped-sensor DSLRs		•	•	•	•	•			95	62	76.6	116.5	435g
90mm f/2.8 SP AF Di Macro	£470	11/09	4★	A very nice macro lens that is capable of producing some fine images		•	•	•	•	•			29	55	71.5	97	405g
90mm f/2.8 Di Macro 1:1 VC USD	£TBC	NYT		Redesign of the 90mm f/2.8 SP AF Di Macro; comes with vibration compensation		•	•	•	•	•			30	58	115	76.4	

ZEISS

LENS	RRP	TESTED	SCORE	SUMMARY	Im	Sor	Cal	For	NW	Per	Sig	Full	Mtr	Fit	(m)	Wi	Le	We	MOUNT		DIMENSIONS	
																			EF	EF-M	EF-M	EF-M
12mm f/2.8 Touit Distagon T*	£959	5/14	5★	Designed specifically for Sony NEX and Fujifilm X-series CSC cameras. Very impressive performance				•						18	67	68	270g					
18mm f/3.5 ZF.2	£1150	8/10	5★	No AF, but the optical and build qualities of this lens are nothing short of stunning			•		•	•	•	•	•	30	82	84	87	470g				
21mm f/2.8 Distagon T*	£1579	NYT		A wideangle lens that doesn't compromise on optical quality			•		•	•	•	•	•	30	82	87	84	510g				
25mm f/2 Distagon T*	£1350	NYT		A landscape lens with a fast aperture			•		•	•	•	•	•	25	67	71	95	570g				
25mm f/2.8 Distagon T*	£750	NYT		A macro lens offering unrivalled quality			•		•	•	•	•	•	17	58	83	55	480g				
28mm f/2 Distagon T*	£850	NYT		For low light shooting the 28mm lens has plenty of potential			•		•	•	•	•	•	24	58	64	93	520g				
32mm f/1.8 Touit Planar T*	£700	7/14	4.5★	Optimised for use with APS-C format sensors, a fast standard lens for Fujifilm X-series cameras			•		•					23	52	72	76	200g				
35mm f/1.4 Distagon T*	£1600	NYT		Promises to produce some stunning bokeh effects			•		•	•	•	•	•	30	72	120	122	850g				
35mm f/2 Distagon T*	£940	NYT		An extremely fast focusing lens			•		•	•	•	•	•	30	58	64	97	530g				
50mm f/1.4 Planar T*	£650	NYT		A portrait lens in its element in low light			•		•	•	•	•	•	45	72	66	69	350g				
50mm f/2 Makro-Planar	£665	NYT		A macro lens with impressive-looking levels of sharpness			•		•	•	•	•	•	24	67	72	88	530g				

CANON CSC

LENSES	RRP	TESTED	SCORE	SUMMARY	IM	CA	M	S	SO	PE	N	FU	FU	MI	FL	IN	W	LE	W
EF-M 18-55mm f/3.5-5.6 IS STM	£269	NYT		Compact and versatile zoom lens	•	•								25	52	61	61	210g	
EF-M 11-22mm f/4-5.6 IS STM	£355	NYT		Ultra-wideangle lens with a compact, retractable lens design	•	•								15	55	61	58.2	220g	
EF-M 22mm f/2 STM	£220	NYT		Small and bright wideangle pancake lens	•	•								15	43	61	23.7	105g	

FUJI CSC

LENS	RRP	TESTED	SCORE	SUMMARY	MOUNT				M	F	W	L	W		
					Im	G	M	S	3D	Pe	Ni	Fu	Di	Mi	Fif
XF 10-24mm f/4 R OIS	£849	NYT		Ultra wideangle lens, minimal ghosting with Fujis HT-EBC multi-layer coating	•				•	•	24	72	78	87	410
XF 14mm f/2.8 R	£729	7/13	5★	Ultra wideangle prime, high resolution to all corners, performance justifies price tag					•	•	18	58	65	58.4	235g
XC 16-50 f/3.5-5.6 OIS	£359	NYT		Lightweight lens for mirrorless X-series offers 24-75mm equivalent zoom range	•				•	•	30	58	62.6	98.3	195g
XF 18mm f/2 R	£430	6/13	4★	A compact, wideangle lens with a quick aperture					•	•	18	52	64.5	40.6	116g
XF 18-135mm f/3.5-5.6 R LM OIS WR	£699	Xmas14	4★	Weather-resistant zoom for Fujifilm X mount, designed to be the perfect partner for the Fujifilm X-T1	•				•	•	45	77	75.7	97.8	490g
XF 18-55mm f/2.8-4 R	£599	NYT		Short zoom lens with optical image stabilisation					•	•	18	58	65	70.4	310g
XF 55-200mm f/3.5-4.8 R LM OIS	£599	11/13	4★	Telephoto with built-in optical image stabilisation plus aperture control ring	•				•	•	110	62	75	118	580g
XF 35mm f/1.4 R	£439	6/13	4★	Shallow depth of field and bokeh effects are simple to achieve with this lens					•	•	28	52	65	54.9	187g
XF 56mm f/1.2 R	£899	9/14	4★	This wide-aperture portrait lens for X series cameras has great sharpness and detail and is great value					•	•	70	62	73.2	69.7	405g

NIKON CSC

LENS	RRP	TESTED	SCORE	SUMMARY	IM	CAN	MIL	SAR	SOP	PER	NIK	FUJ	HOL	MIC	FIL	INF	W	L	W
					MOUNT													DIMENSIONS	
6.7-13mm f/3.5-5.6 VR 1	£459	NYT		Compact, lightweight, ultra-wide angle zoom lens with Vibration Reduction for Nikon 1 system	•					•			25	52	56.5	46	125g		
10mm f/2.8	£229	2/12	4★	A wideangle lens for Nikon's 1 series of Compact System Cameras						•			20	40.5	55.5	22	77g		
10-30mm f/3.5-5.6 VR	£149	NYT		Nikon's kit lens for the 1 series of CSC models	•					•			20	40.5	57.5	42	115g		
11-27.5mm f/3.5-5.6	£179	NYT		Compact standard zoom for Nikon 1 system						•			30	40.5	57.5	31	80g		
32mm f/1.2	£799	NYT		First 1 system lens to offer a silent wave motor and nano crystal coating						•			45	52	66	47	235g		
10-100mm f/4-5.6 VR 1	£479	NYT		CX-format zoom lens with focal length range of 10-100mm (27-270mm 35mm equivalent)	•					•			35	55	60.5	70.5	298g		
18.5mm f/1.8	£179	NYT		Nikon's 1 series gains a traditional fast prime						•			20	40.5	56	36	70g		
30-110mm f/3.8-5.6 VR	£229	NYT		A longer zoom lens, with image stabilization, for the Nikon 1 series	•					•			100	40.5	60	61	180g		
10-100mm f/4.5-5.6 VR PD-ZOOM	£679	NYT		A powered zoom lens aided by the VR image stabilization system	•					•			300	72	77	95	530g		

OLYMPUS CSC

LENS	RRP	TESTED	SCORE	SUMMARY	IM	Ca	Mi	Sa	3D	Pe	NW	Fu	Fu	Mi	Fu	Im	W	L	W
																			DIMENSIONS
9-18mm (Micro) f/4-5.6 ED	£630	NYT		This super wideangle lens offers an equivalent focal range of 18-36mm in 35mm terms		•								25	52	56.5	49.5	155g	
12mm (Micro) f/2.0 ED	£739	1/12	5★	A wideangle fixed lens for the Micro Four Thirds system		•								20	46	56	43	130g	
12-50mm (Micro) f/3.5-6.3 ED EZ	£349	NYT		A reasonably-priced MFT zoom lens		•								20	52	57	83	211g	
17mm M.Zuiko f/1.8 MSC	£450	7/13	5★	Wide-aperture, wide-angle prime boasting excellent peak sharpness and no colour fringing		•								25	46	57	35	120g	
17mm (Micro) f/2.8 Pancake	£300	5/10	4★	Results are impressive across the most-used apertures given the wide angle of view offered		•								20	37	57	22	71g	
14-42mm (Micro) f/3.5-5.6 ED	£300	5/10	4★	Generally a good performer, but control over chromatic aberrations could be a little better		•								25	40.5	62	43.5	150g	
14-42mm II R (Micro) f/3.5-5.6 II	£269	NYT		A redesigned variation of the standard kit lens		•								25	37	56.5	50	112g	
14-150mm (Micro) f/4-5.6 ED	£630	NYT		Plenty of focal range is offered by this MFT lens		•								50	58	63.5	83	280g	
40-150mm f/2.8 ED	£1299	03/15	4★	This powerful 80-300mm 35mm equivalent focal length lens offers amazing portability for this pro class		•								70	72	79.4	160	760g	
45mm (Micro) f/1.8	£279	2/12	5★	Fast-aperture lens for taking portrait shots proved to be sharp, quiet and without colour fringing		•								50	37	56	46	116g	
75-300mm II (Micro) f/4.8-6.7	£499	NYT		Update featuring Zuiko Extra-low Reflection Optical coating said to reduce ghosting		•								90	58	69	117	423g	
75mm f/1.8 ED	£799	8/13	5★	Ultra-fast prime lens ideal for portraits and action shots		•								84	58	64	69	305g	

PENTAX CSC

LENS	RRP	TESTED	SCORE	SUMMARY	Inter.	Mic.	Salt.	Sol.	Per.	NIK.	Fuj.	Fuji.	Min.	Filter (mm)	Wid.	Len.	Wid.
8.5mm (Q System) f/2.8	£TBC	NYT		The standard prime lens in the Q system					•				30	40.5	48.5	48	96g
6.3mm (Q System) f/7.1	£129	NYT		A wide lens for the Q system					•					N/A	40.6	25	21g
15-45mm (Q System) f/7.1	£249	NYT		Telephoto zoom covers focal lengths between 83mm and 249mm in 35mm terms					•				40	50	56	90g	
18mm (Q System) f/8	£129	NYT		A telephoto lens for the Q system					•					N/A	40.6	19.5	18g
3.2mm (Q System) f/5.6	£149	NYT		A fisheye lens for the Q system					•				90	N/A	40.6	30.5	29g
5-15mm (Q System) f/2.8	£279	NYT		A short zoom lens for the Q system					•					40.5	45.5	23	37g

PANASONIC LUMIX CSC

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Canon M	Micro 4/3rds	Samsung NX	Sony E	Pentax Q	Nikon 1	Fuji X Mount	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
G 7-14mm f/4 ASPH	£1300	5/10	5★	For a wideangle zoom, the overall level of resolution is very impressive		•								25	-	70	83.1	300g
G 8mm Fisheye f/3.5	£730	NYT		The world's lightest and smallest fisheye lens for an interchangeable lens camera		•	•							10	22	60.7	51.7	165g
G 12mm 3D Lens f/12	£320	NYT		Allows compatible cameras to shoot 3D images		•	•							60	-	57	81.8	45g
G X 12-35mm f/2.8 X PZ POWER OIS	£1095	10/12	5★	Fast, high-quality standard zoom for Micro Four Thirds cameras		•	•							25	58	67.6	73.8	305g
G 14mm f/2.5	£249	NYT		Wideangle pancake lens which should suit landscape photographers		•	•							18	46	55.5	20.5	55g
G 14-42mm II ASPH MEGA OIS	£375	NYT		Addition of two aspherical elements helps make this lens smaller than previous version		•	•							20	46	56	49	110g
G X 14-42mm X PZ POWER OIS	£369	2/13	4★	Powered zoom; impressive results in terms of both sharpness and chromatic aberration		•	•							20	37	61	26.8	95g
G 14-45mm f/3.5-5.6 ASPH MEGA OIS	£189	NYT		A lightweight and compact standard zoom featuring MEGA O.I.S. optical image stabilisation		•	•							30	52	60	60	195g
G 14-140mm ASPH POWER OIS	£599	NYT		Metal-bodied zoom featuring company's POWER O.I.S. optical image stabiliser		•	•							30	58	67	75	265g
15mm f/1.7 ASPH LEICA DG SUMMILUX	£549	NYT		High-speed prime with a compact metal body and includes 3 aspherical lenses to cut down distortion		•	•							20	46	36	57.5	115g
DG 25mm f/1.4 DG SUMMILUX	£550	2/12	5★	A fast-aperture fixed focal length standard lens from Leica		•	•							30	46	63	54.5	200g
G X 35-100mm f/2.8 POWER OIS	£1099	NYT		Telephoto zoom with Nano Surface Coating technology for dramatic reduction of ghosting and flare		•	•							85	58	67.4	100	360g
G 45-150mm ASPH MEGA OIS	£280	2/13	4★	Compact, lightweight telephoto zoom comprising 12 elements in 9 groups		•	•							90	52	62	73	200g
DG Macro 45mm f/2.8 ASPH MEGA OIS	£730	5/10	4.5★	Although maximum and minimum aperture are a tad weak, mid-range scores impress		•	•							15	46	63	62.5	225g
G X 45-175mm f/4-5.6 X PZ POWER OIS	£400	7/12	4★	A powered long focal length zoom lens		•	•							90	46	61.6	90	210g
G 45-200mm f/4-5.6 MEGA OIS	£330	7/12	4★	Superzoom lens with three ED elements and Mega O.I.S. technology		•	•							100	52	70	100	380g
G 100-300mm f/4-5.6 MEGA OIS	£550	7/11	4★	Long zoom lens offering optical image stabilization		•	•							100	52	70	100	380g

SAMSUNG CSC

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Canon M	Micro 4/3rds	Samsung NX	Sony E	Pentax Q	Nikon 1	Fuji X Mount	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
9mm f/3.5 ED	£149	NYT		At 12.5mm thin, this pancake lens is constructed of solid metal, made for the NX Mini only		•								11	N/A	50	12.5	31g
9-27mm f/3.5-5.6 ED OIS	£199	NYT		Versatile and compact zoom lens – NX-M mount for NX Mini only		•	•							14	40.5	50	29.5	73g
10mm f/3.5 fisheye	£399	NYT		Lightweight and compact, this versatile fisheye lens can be used with a wide range of Smart NX cameras		•	•							9	N/A	58.8	26.3	72g
17mm NX-M f/1.8 OIS	£160	NYT		Portrait prime lens designed with an NX-M Mount for the NX Mini		•	•							18	39	50	28	55g
12-24mm f/4-5.6 ED	£480	NYT		Portable ultra-wideangle zoom lens with i-function		•	•							24	58	63.5	65.5	208g
16mm NX i-Function f/2.4	£299	NYT		A pancake lens with a wide angle of view		•	•							18	43	61	24	90g
16-50mm f/2-2.8 Premium S ED OIS	£999	NYT		Bright-aperture zoom lens made of metal, with quiet AF performance whether shooting stills or video		•	•							30	72	81	96.5	622g
16-50mm f/3.5-5.6 Power Zoom	£279	NYT		Ultra-compact and lightweight design		•	•							24	43	64.8	31	111g
20-50mm f/3.5-5.6 ED II	£199	NYT		Ultra-compact lens with a retractable design. It's lightweight and an ideal optic for travelling		•	•							28	40.5	63.2	39.8	119g
18-55mm NX i-Function OIS f/3.5-5.6	£199	9/10	4.5★	Not an outstanding set of MTF curves but acceptable nevertheless. Weaker at 18mm		•	•							28	58	63	65	198g
18-200mm NX i-Function OIS f/3.5-6.3	£649	9/12	4.5★	A mid-range zoom lens aimed at movie making		•	•							50	67	72	105.5	549g
20mm NX i-Function f/2.8	£229	2/12	5★	Wideangle pancake lens		•	•							17	43	62	25	89g
30mm NX i-Function f/2	£249	9/10	4★	This pancake optic exhibits very impressive peak sharpness at around f/4-5.6		•	•							25	43	61	21	85g
45mm NX i-Function f/1.8	£249	NYT		Fast f/1.8 aperture produces a shallow depth of field making it ideal for portraiture		•	•							45	43	62	44.5	115g
45mm NX i-Function f/1.8 2D/3D	£399	NYT		Delivers high-end 3D capabilities with a large aperture and smooth autofocus system		•	•							50	43	62	44.5	122g
50-150mm f/2.8 S ED OIS	£1199	NYT		Premium zoom lens with advanced OIS, constant f/2.8 aperture, and dust and splash-resistant		•	•							70	72	81	154	915g
50-200mm NX i-Function ED OIS III f/4-5.6	£249	9/10	4★	Performance at the 50mm end is good, though this drops off at the tele end		•	•							98	52	70	100	417g
60mm NX i-Function Macro ED SSA OIS f/2.8	£499	2/12	5★	This prime lens with macro capability should be useful for portraiture		•	•							18	52	73.5	84	389g
85mm NX i-Function ED SSA OIS f/1.4	£849	4/12	5★	This prime lens is missing image stabilisation, but should still perform well		•	•							82	67	79	92	714g

SIGMA CSC

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Canon M	Micro 4/3rds	Samsung NX	Sony E	Pentax Q	Nikon 1	Fuji X Mount	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Weight
19mm f/2.8 DN A	£189	NYT		Metal-bodied high-performance wideangle prime lens		•								20	46	60.8	45.7	150g
30mm f/2.8 DN A	£189	NYT		Uses a high-quality double-sided aspherical lens for expressive performance worthy of Sigma's 'Art' line		•	•	•						30	46	60.8	40.5	140g
60mm f/2.8 DN A	£189	NYT		Latest addition to Sigma's 'Art' range is a mid-range, high-performance telephoto lens with metal body		•	•	•						50	46	60.8	55.5	190g

LENS	RRP	TESTED	SCORE	SUMMARY	Image Stabilisation	Canon M	Micro 4/3rds	Samsung NX	Sony E	Pentax Q	Nikon 1	Fuji X Mount	Full Frame Only	Min Focus (cm)	Filter Thread (mm)	Width (mm)	Length (mm)	Dimensions
10-18mm f/4	£750	8/13	4★	Super wideangle zoom with Super ED glass and Optical SteadyShot image stabilisation		•								25	62	70	63.5	225g
16mm f/2.8	£220	2/12	4★	Pancake lens for NEX system, with a circular aperture and Direct Manual Focus		•	•							24	49	62	22.5	67g
16-50mm f/3.5-5.6	£299	NYT		Compact lens with Power Zoom, ED glass and Optical SteadyShot image stabilisation		•	•							25	40.5	64.7	29.9	116g
16-70mm f/4 ZA OSS Vario-Tessar T*	£839	NYT		A lightweight, versatile mid-range zoom with a constant f/4 aperture		•	•							35	55	66.6	75	308g
18-55mm f/3.5-5.6	£270	NYT		Optical SteadyShot, said to be silent during movie capture, and a circular aperture		•	•		</td									

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19mm f/2.8 DN	fr. £129.00	800mm f/5.6 APO EX DG	£4,399.99	70-300mm f/4.0-5.6 DG Macro	£99.00
20mm f/1.8 DG Asph. RF	£389.00	8-16mm f/4.5-5.6 DC HSM	fr. £499.00	70-300mm f/4.0-5.6 DG OS	£199.00*
24mm f/1.8 DG Asph. Macro	£399.00	10-20mm f/4.5-5.6 EX DC	£329.00	120-300mm f/2.8 OS HSM S	£2,699.00
28mm f/1.8 DG EX Macro	£249.99	10-20mm f/3.5 EX DC HSM	£389.00	120-400mm f/4.5-5.6 DG OS	£469.99*
30mm f/1.4 DC HSM	£369.00	12-24mm f/4.5-5.6 II DG HSM	£575.00	150-500mm f/5.0-6.3 DG OS	£699.00
30mm f/2.8 DN	£139.99	17-50mm f/2.8 DC OS HSM	£299.00	200-500mm f/2.8 EX DG	£12,699.99
35mm f/1.4 DG HSM	£639.99	17-70mm f/2.8-4 Macro OS	£329.00	300-800mm f/5.6 EX DG HSM	£5,498.00
50mm f/1.4 EX DG HSM	£319.00	18-35mm f/2.8 DC HSM	£624.99	EX DG 1.4x APO	£198.00
50mm f/2.8 Macro	£179.99	18-200mm f/3.5-6.3 II DC OS	£209.00	EX DG 2x APO DG	£232.00
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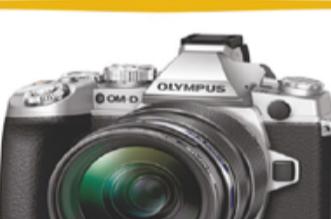


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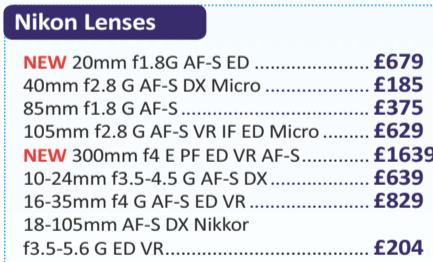
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Cheetahs, Lions, Foxes, Birds of Prey, Cambs. £109

April 18th, May 23rd; Privileged access to Cheetahs, Bengal Tiger, White Tiger & Corsac Foxes. The Cheetah & Tiger enclosures are not mowed for enhanced photographic opportunities. Private Displays by various Birds of Prey, both static & flying. Jesses hidden for static shots. New Cheetah Cubs for 2015

Amazing Bat Photos & Learn Fill-in Flash Techniques £129

April 16th, 17th; Oxfordshire. We will concentrate on the Bats first. Take amazing bat photos. Practice fill-in flash on many other wildlife subjects in different lighting conditions. Max 4 persons. We are most happy to lend you a Canon digital camera and flash unit for the day. Indoor exhibits make weather conditions irrelevant.

Big Cats at WHF, Smarden in Kent £149

March 21st, 28th. April 11th; Up close to African Lions, Bengal + Siberian + Sumatran Tigers, Serval, Cheetah, Pumas, Jungle Cat, Amur & Snow Leopards, Black Leopards, Clouded Leopards, Fishing Cat. Large open enclosures. UK's most popular photo workshop. Really special photo opportunities from just inches away. Two sets of Lion Cubs born July & August 2013. Huge natural enclosure. Max 12 clients.

Big Cats at WHF, Smarden in Kent - Specialist event for just 6 photographers - includes Jaguar £199

April 8th, 9th, 10th; Full day as above, but with additional space at each enclosure. Time is also put aside to review your photos at lunchtime. One to one tuition throughout this very special day. You will see all the animals as above and you will have more personal interaction with the cats. Now including Jaguar.

Gift Vouchers available for any Workshop or for any Monetary Value.

These Experiences make Wonderful Gifts for that Special Occasion.

Gorillas & African Safari Experience, Port Lympne £149

March 22nd, 29th, April 12th; 3 gorilla sessions. No wires, fences or bars throughout the day. Clean backgrounds plus Privileged Access. Photograph at eye level over moat. Huge male silverbacks + family group. Private VIP Safari for 2.5 hours. Rhinos, Wildebeest, Eland, Zebras, Giraffes, Buffalo, Ostriches, various Deer.

Birds of Prey Workshop, Bedford £99

April 25th, 26th; Private flying displays on pre-determined flightpath helps you to focus on birds in flight. Excellent opportunities with carefully chosen backgrounds. Also static shots in outstanding wooded locations. Jesses carefully hidden. This location boasts one of the largest collections of Birds of Prey in the UK. White tailed Sea Eagle, Bald Eagles, Hawks, Owls, Falcons, Kestrels, Buzzards and Long Eared Owl (new).

Foxes, Otters, Wildcats, Badgers & more, Surrey £139

July 6th, 7th, 8th; Inside enclosures 'till sunset. Also Owls, Snakes, Badgers, Polecats, Weasels, Hedgehog, Harvest Mice & various Deer. This is possibly Englands longest established photographic venue. 2 sessions with the foxes, sometimes only inches away from you. Time is spent inside encloses with Foxes, Otters & Scottish Wildcats. Badgers GUARANTEED. No fences or wires to shoot through for any subject today.

Small Cats Workshop, Welwyn, Herts. £99

April 22,23 24; Privileged access to Snow Leopards, Amur Leopards, Pumas, Caracal, Leopard Cat, Lynx, Servals, Golden Cat. As featured on recent series of TV programs on Animal Planet. Small groups. Tuition

Bass Rock Gannets £185

June 5, 7, 11, 18, 21st; Private boat. Exclusive use of island for just 10 photographers. 50,000 pairs of nesting gannets on one small island. 4.5 hours photography. Amazing close-ups & fantastic flight shots. Large crate of fish fed to gannets as they dive into the sea. An amazing sight that you will never forget.

Gannets diving off Bass Rock £99

June 19th; Fantastic new workshop for 2014. We sail round Bass Rock without landing on the island. A whole hour of throwing fish into the sea for the Gannets to catch. Amazing diving shots. 1,000 + dives. Tuition.

Farne Islands Puffins (Over 5 hrs photography) £89

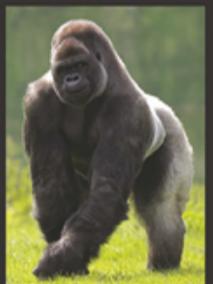
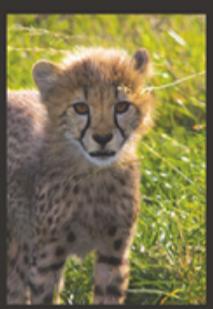
June 6th, 10th, 17th, 20th; 20 species of birds. 50,000 puffins. Guillemots, Razorbills, Shag, Arctic Tern colony etc. You will get unbelievably close to some of the species. Get that much sought after shot of Puffins with their beaks crammed full of sand eels. Tips and Tuition. Approximately 5 hours photography.

Pro Birds of Prey Shoot, Bamburgh, Northumberland. £139

June 13th, 14th; Amazing photography opportunities. Hill top views overlooking large extensive valleys and seascapes. Rocks and gorse bushes abound. Golden Eagle, Peregrine Falcon, Snowy Owl, Eagle Owl and Barn Owl will be placed in really natural situations. Jesses will be hidden where possible for those perfect "in the wild" shots. Can combine with Bass/Farne as this location is very close to the Farne Islands.

Pro Birds of Prey Shoot (2), Bamburgh, Northumberland. £139

June 4th, 8th, 12th, 16th; New venue. Both the falconer and the birds are different to workshop above. Venues are about 20 miles apart. We will take two of the birds down to an amazingly beautiful, little known waterfall. This will provide a unique backdrop for your subjects. The falls are surrounded by trees covered with mosses and lichens. We will photograph up to 10 different species, mainly British. Maximum 8 photographers.



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We reveal the tips and techniques you need for shooting your best ever landscapes at the crack of dawn

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Everything to look for from a bridge compact revealed, plus we round up the hottest models on the market

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Capable of shooting 40MP stills, is the OM-D E-M5 Mk II the ultimate CSC for the passionate enthusiast?

MASTER YOUR CAMERA

We explore the video tools on the Canon EOS 7D Mark II and uncover why it's the first choice DSLR for videographers

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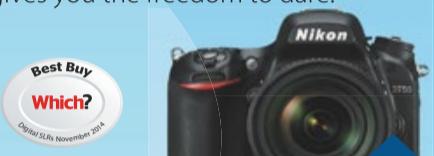
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